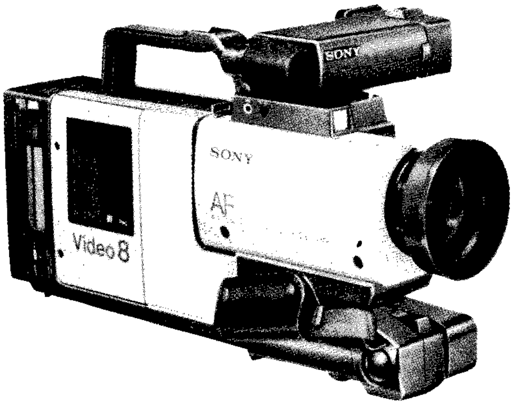
CCD-V100E

SERVICE MANUAL

AEP Model
UK Model
Australian Model
E Model



Video 8

This manual contains the SUPPLEMENT-1~4.

SPECIFICATIONS

System

Video recording system	Rotary two heads, Helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	PAL colour, CCIR standards
Usable cassette	8mm video format cassette
Tape speed	SP: Approx. 20.051 mm/sec. LP: Approx. 10.058 mm/sec.
Recording or playback time	SP: 90 min. (P5–90) LP: 180 min. (P5–90)
Fast forward time	Approx. 4 min.
Image device	CCD (Charge Coupled Device)
Viewfinder	Electric viewfinder (0.7" black and white)
Lens	Combined 6 × power zoom lens, variable zooming speed (approx. 5 to 15 sec.) f = 12–72 mm, F1.4 with macro Filter diameter: 52 mm
Auto focus system	TCL
Colour temperature	Preset values: ☀ 5,800 K ☼ 3,200 K Auto: From the light at a tungsten lamp to the light on a slightly overcast day.
Minimum illumination	17 lux (F1.4), SENS at HIGH (1.6 footcandles)
Illumination range	17 lux–100,000 lux (1.6–9,294 footcandles)
Recommended illumination	More than 300 lux (28 footcandles)
Aperture correction	Automatic, manual (variable)

Input and output connector

MULTI CONNECTOR	24-pin Video input: 1 Vp-p, 75 ohms unbalanced, sync negative Video output: 1 Vp-p, 75 ohms unbalanced, sync negative Audio input: –6 dBs, input impedance more than 47 kilohms Audio output: –6 dBs, at output impedance less than 1 kilohm
Accessory jacks	Video input: miniphono, 1 Vp-p, 75 ohms unbalanced, sync negative Video output: miniphono, 1 Vp-p, 75 ohms unbalanced, sync negative
Earpiece jack	Minijack, 8-ohm impedance
Remote connector	5-pin connector
MIC jack	Minijack, –66 dBs, low impedance With 2.5–3 V DC output, impedance 6.8 kilohms
Microphone power output jack	Special minijack, 5 V DC

– Continued on next page –

8 VIDEO CAMERA RECORDER

SONY®

MICROFILM

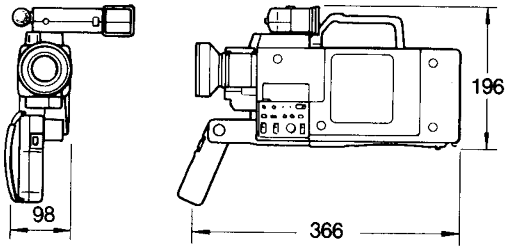
VIDEO

Display in the viewfinder

Mode and caution indication	Small 14 characters × 2 lines
Main title indication	Large 10 characters × 2 lines, 7 colours selectable
Sub title indication	Small, 6 + 8 characters, 7 colours selectable
Date or time indication	Small 8 characters Date: From 1 Jan. 1986 to 31 Dec. 2015 Time: 24 hour cycle
Clock	Crystal lock
Memory back-up	Approx. 2 years using the CR2025 lithium battery

General

Power requirements	MULTI CONNECTOR 8.5 V Battery compartment 6 V/8.5 V
Power consumption	7W (camera recording) including the viewfinder
Installation	Horizontally, vertically
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Dimensions	Approx. 98 × 196 × 366 mm (w/h/d) ($3\frac{7}{8} \times 7\frac{3}{4} \times 14\frac{1}{2}$ in.)



Weight	Approx. 2.3 kg (5 lb 1 oz) excluding the battery and cassette Approx. 2.6 kg (5 lb 13 oz) including the battery and cassette
Microphone	Electret condenser microphone, uni-directional monaural type

Accessories supplied

- Shoulder strap (1)
- Sticker (1)
- Lithium battery (1)

Optional accessories

Tuner timer unit TT-V8EC/V8UB, AC power adaptor AC-V8E/V8UB, Battery pack NP-22, NP-4000, DC pack DCP-80, Car battery cord DCC-16AE, External microphone shoe SAD-100, Remote Commander RM-84, Cable VMC-262M (2 phono to 6-pin), VMC-2104M (4 phono to 21-pin), VMC-2106S (3 phono to 21-pin), VMC-600M/601M (2 phono to 2 phono) VMC-602MS/603MS (2 phono to 3 phono), AVM-T515V (miniphono to 2 phono)

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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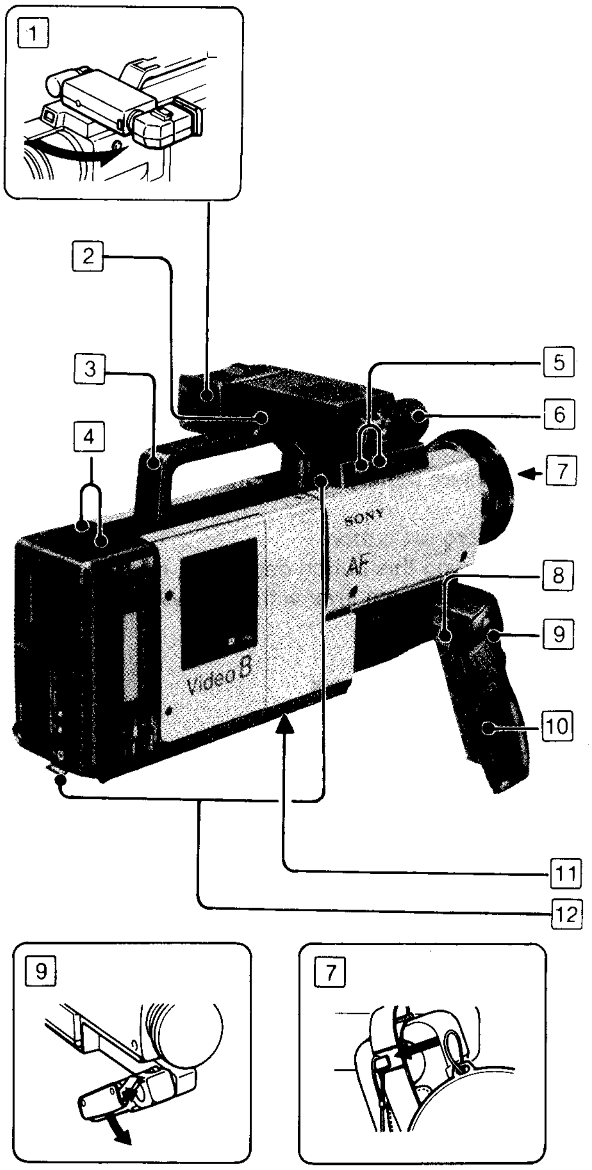
SUPPLEMENT-1
SUPPLEMENT-2

SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF PARTS AND CONTROLS

A-1



For details on the use of each control, refer to the pages indicated in the brackets.

Video camera section

A-1

1 **Viewfinder**
The picture being recorded or played back can be monitored in monochrome through this viewfinder. Data such as the tape counter, function mode, caution indicators, recording title, date, time, are also displayed on the viewfinder screen.

2 **Accessory shoe**
Attach an optional external microphone, video light, etc.

3 **Handle**

4 **Battery compartment and battery eject switch**

Insert a battery pack, AC pack or DC pack.

5 **MIC jack and DC OUT (microphone power output) jack**
Connect an external microphone.
The MIC jack accepts Sony "plug-in-power" microphones.

6 **Built-in microphone**

7 **Lens cap**

8 **Power zoom button**
Press for smooth power zooming between wide-angle (W) and telephoto (T) positions.

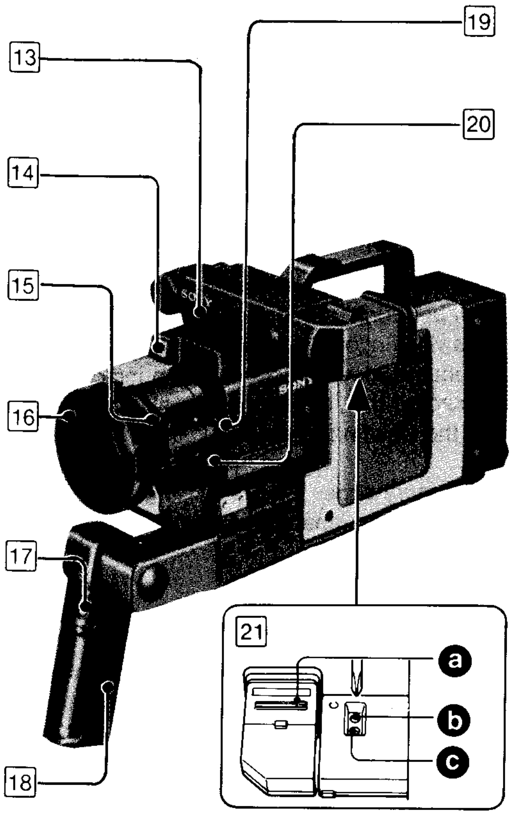
9 **Release button** [p.14]
Press to unlock the hand grip when adjusting the grip position.

10 **Hand grip and grip strap** [p.13]

11 **Tripod receptacle**
Attach an optional tripod.

12 **Hooks for shoulder strap** [p.14]

A-2



A-2

13 Camera recording/battery lamp
Lights during camera recording. It blinks when the battery is exhausted.

14 White balance sensor
This is the sensor for the auto white balance adjustment. Be careful not to cover it.

15 Focus ring [p.18]
For manual focusing, turn this ring to focus while looking through the viewfinder.
This ring will be turned automatically during auto focusing.

16 Lens hood
Normally keep it attached. When attaching an optional filter or special lens or for macro shooting, turn it counterclockwise to remove.

17 START/STOP button
Press to start or stop camera recording.

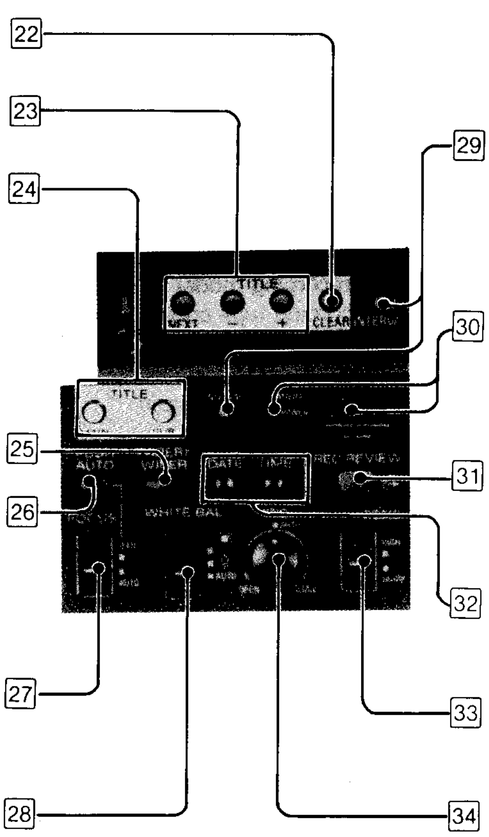
18 Lithium battery compartment [p.12]

19 Macro set button
Keeping this button depressed, move the manual zoom lever within the MACRO range for close-ups.

20 Manual zoom lever

21 Bottom of the viewfinder
ⓐ Viewfinder lens adjustment lever [p.13]
Adjust to your eyesight to assure good focus. Be sure to adjust this knob when shooting for the first time.
ⓑ Focus control screw
ⓒ Brightness control screw
Normally, there is no need to adjust these screws. Adjust only when the picture is not displayed clearly.

A-3



A-3

22 CLEAR button [p.27]
Press to clear the preset main or sub title.

23 TITLE +/− buttons and NEXT button [p.23, p.24, p.27]
Used to set the colour and characters of the title, date, time, and colour of the wiper.

24 TITLE MAIN and SUB buttons [p.27]
Press to display or turn off the main and sub titles.
Keep the button depressed for more than 3 seconds to enter title setting mode.

25 FADER/WIPER button [p.22, p.23]
Press to select the fader, wiper or normal mode. Keep the button depressed for more than 3 seconds to enter wiper colour setting mode.

26 PUSH AUTO button [p.18]
Keep it depressed to activate the auto focusing if in the manual focusing mode.

27 FOCUS switch [p.18]
Normally set to AUTO for the auto focusing. To focus manually, set to MAN (manual).

28 WHITE BAL (white balance) switch [p.20]
Normally set to AUTO for the auto white balance adjustment. Set it to ☀ (outdoors) or 💡 (indoors) according to lighting conditions.

29 INTERVAL recording button and lamp [p.21]
Press to activate the automatic interval recording function. The lamp lghts during interval recording.

30 CAMERA POWER switch and lamp [p.13]
Slide to the right to turn on the camera section. The lamp lights up. Slide again to turn it off.

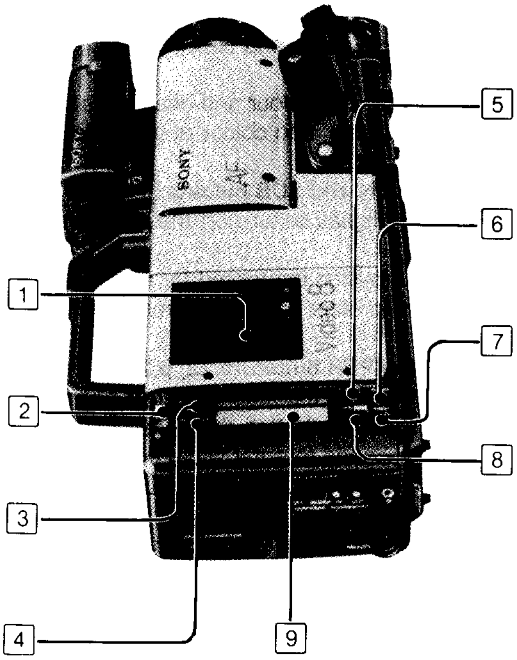
31 REC REVIEW (recording review) button [p.16]
Press to play back the end of the previously recorded part for several seconds.

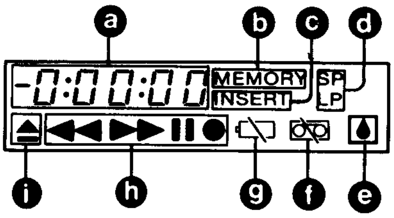
32 DATE and TIME buttons [p.25]
Press to display or turn off the date or time. Keep these buttons depressed simultaneously for more than 3 seconds to enter date and time setting mode.

33 SENS (sensitivity) selector [p.21]
Normally set to NORM (normal).

34 IRIS control [p.21]
Normally set to AUTO.

A-4





Video cassette recorder section

A-4

1 Cassette compartment

2 ⏏ (cassette eject) switch

3 VTR POWER switch and lamp
Press to turn on the recorder section. The lamp lights up. Press the switch again to turn it off.

4 REC MODE (recording mode) selector
Select the recording tape speed, LP or SP.

5 RESET button
Press to reset the counter to zero.

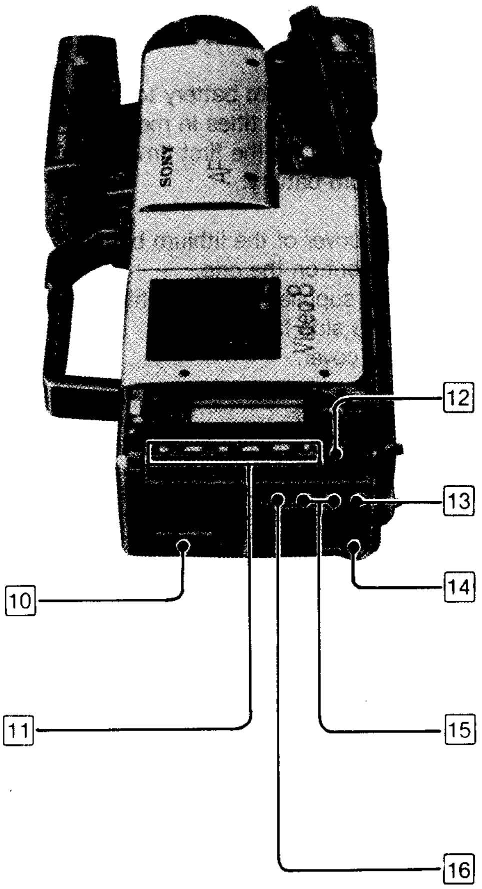
6 MEMORY button [p.29]
To return the tape to the counter zero point, press this button to display the MEMORY indicator in the display window, and press the ▶▶ or ◀◀ button.

7 INSERT button [p.30]
Press to insert a new picture and sound onto a previously recorded tape.

8 EDIT switch
Normally keep this switch at the left position. When editing a tape, set to EDIT.

9 Display window
ⓐ Tape counter
ⓑ MEMORY indicator
ⓒ INSERT indicator
ⓓ Tape speed indicator
ⓔ Blinks when moisture has condensed inside the unit.
ⓕ Lights steadily when no cassette is inserted. Blinks when the tape approaches its end.
ⓖ Blinks when the battery is weak.
ⓗ Tape operation mode indicators
ⓘ Blinks when moisture has condensed on the tape, when the tape approaches its end during camera recording or when the tape does not run normally.
Lights steadily when the cassette is being unloaded.

A-5



A-5

MULTI CONNECTOR
Connect an RFU adaptor, AC power adaptor or tuner timer unit.

Tape transport buttons
◀◀ (rewind), ▶ (playback), ▶▶ (fast-forward), ■ (stop), ❚❚ (pause), ❚❚▶ FRAME (frame-by-frame playback)

REC (recording) switch
Slide to the right to start recording.

🎧 (earphone) jack (mini)

REMOTE connector (5-pin)
Connect an optional Remote Commander, editing controller, etc.

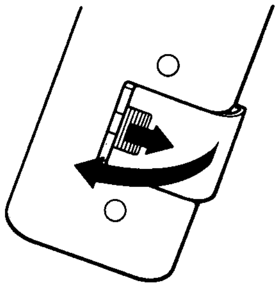
ACCESSORY IN/OUT jacks (miniphono)
Connect an optional colour corrector, etc.

SHARPNESS control
Normally set to the center detent position.

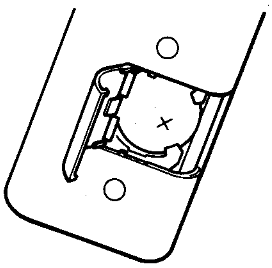
1-2. LITHIUM BATTERY

B-8

1



2



B-8

This unit uses a lithium battery to activate the clock and to keep the titles in memory. Before operating the unit for the first time, install the supplied lithium battery.

1 Open the cover of the lithium battery compartment on the grip.
2 Install the supplied CR2025 lithium battery with the ⊕ side facing out.
3 Close the cover.

LITHIUM BATTERY LIFE

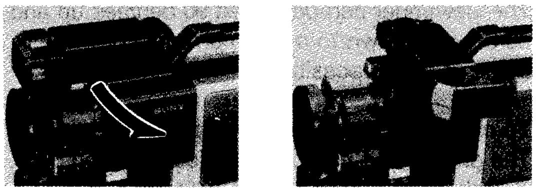
Approximately 2 years in normal operation.
When the lithium battery becomes weak, the time indication will blink on the viewfinder screen for several seconds immediately after the CAMERA POWER switch is turned on.

NOTES ON LITHIUM BATTERY

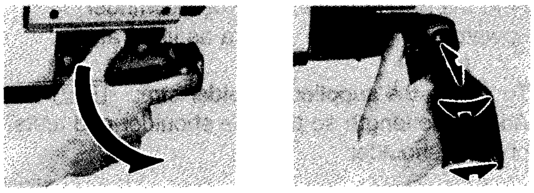
- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery nor throw it into a fire, which might cause it to explode. Carefully dispose of the used batteries.

1-3. PREPARATIONS FOR CAMERA RECORDING

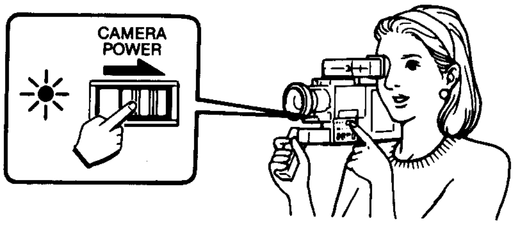
D-1



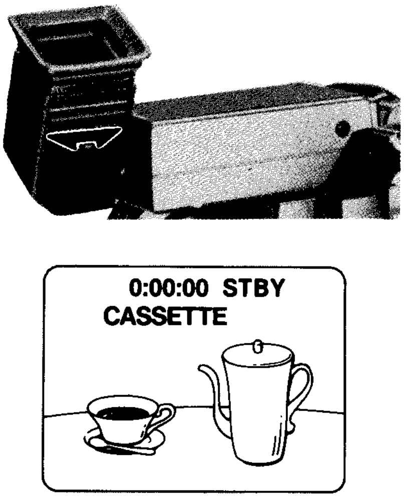
D-2



D-3



D-4



1 Set the viewfinder. D-1

Turn the viewfinder until it locks (90 degrees).

2 Set the grip. D-2

❶ Pressing the release button, turn the grip until it locks.
❷ Hold the grip so that your thumb and forefinger can minipulate the power zoom button and the START/STOP button respectively.
❸ Adjust the length of the grip strap.

3 Slide the CAMERA POWER switch to the right. D-3

4 Position the video camera recorder. D-3

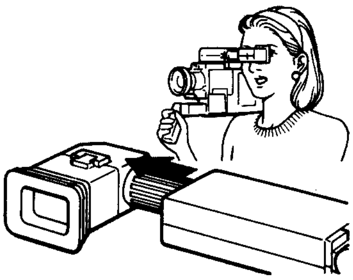
Remove the lens cap.
For stable shooting, rest the unit on your shoulder while holding the upper arm firmly against your body.

5 Adjust the position of the viewfinder lens. D-4

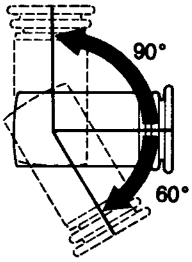
This adjustment is necessary only when you use the camera for the first time or after another person has used it, because the distance of optimum vision varies from person to person.

Turn the viewfinder upward and adjust the viewfinder lens adjustment lever so that the indications displayed on the viewfinder screen come into sharp focus.

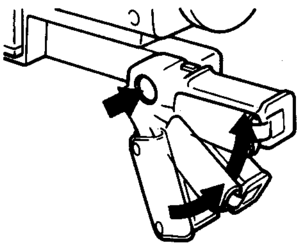
D-5



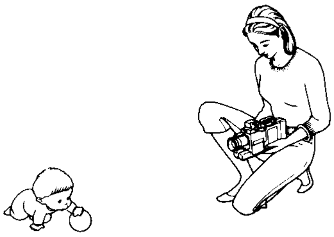
D-6



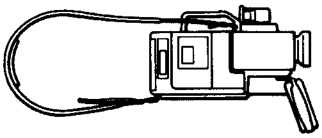
D-7



D-8



D-9



To view with you left eye D-5
Pull out the viewfinder until it locks.

To change the angle of the viewfinder D-6
The viewfinder can be turned 90 degrees up and 60 degrees down to make high-angle or low-angle shooting possible.

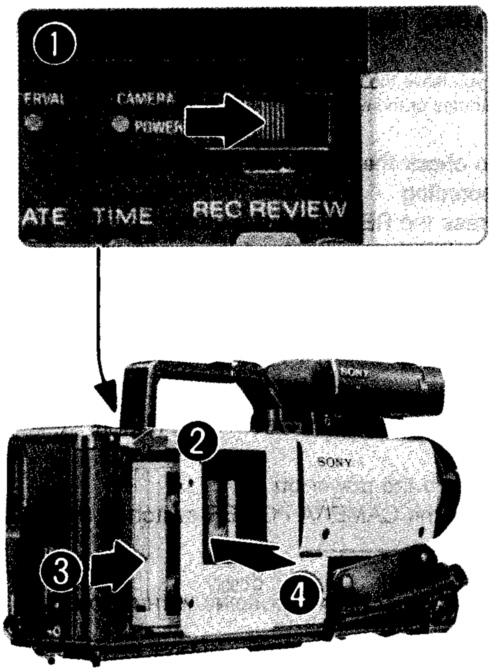
To change the angle of the grip D-7
The grip can be set to one of four positions. Pressing the release button, turn the grip until it locks at the desired position.

When shooting from a low angle D-8
Fold the grip in place, turn the viewfinder upward and hold the camera as illustrated.

To attach the supplied shoulder strap D-9
Adjust the length so that the shoulder pad rests on your shoulder.

1-4. EASY CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

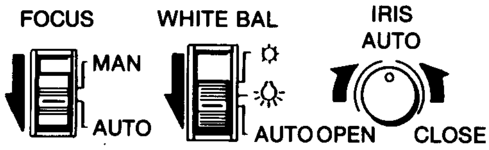
E-1


①
CAMERA
POWER
ATE TIME REC REVIEW
SONY
②
③
④

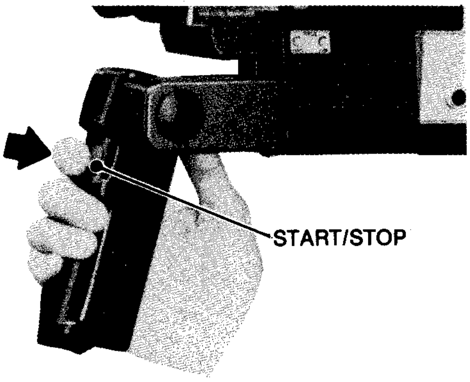
E-2

REC MODE
SP
LP

E-3


FOCUS
MAN
AUTO
WHITE BAL
AUTO
IRIS
AUTO
OPEN
CLOSE

E-4



OPERATION

1 **Slide the CAMERA POWER switch to the right (to set to CAMERA mode) and insert a cassette.** E-1

2 **Set the REC MODE selector to LP or SP, according to the length of the programme to be recorded.** E-2

The recording time of a cassette in the LP mode is twice as long as that in the SP mode.

3 **Set the following selectors to the standard position (green position) for automatic adjustments.** E-3

FOCUS → AUTO (auto focusing)
WHITE BAL → AUTO (linear auto white balance)
IRIS → AUTO (auto iris)

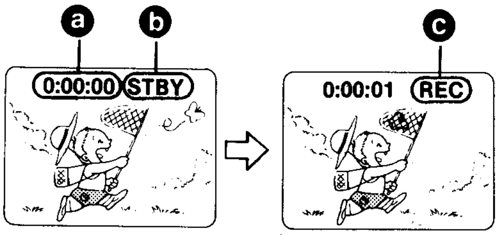
4 **Position the camera and press the START/STOP button.** E-4

The subject seen through the viewfinder and the sound picked up through the microphone can be recorded.

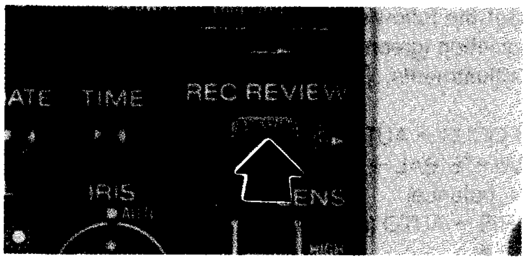
5 **To stop recording, press the START/STOP button.**

The unit will enter recording pause mode.

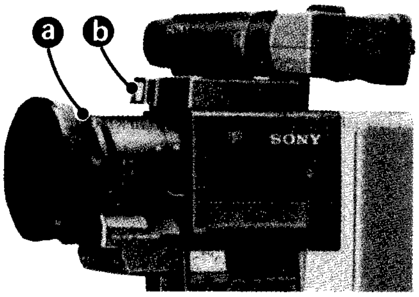
E-5



E-6



E-7



Check on the viewfinder screen E-5

ⓐ Tape counter
ⓑ STBY: Displayed during recording pause mode.
ⓒ REC: Displayed during recording.

If you leave the unit in the recording pause mode for 7 minutes or more, the power will be automatically turned off.

To check the last scene of the previous recording

Press the REC REVIEW button. E-6

The last few seconds of the recorded scene are played back in reverse, and then played back normally. Then the unit will enter recording pause mode.

To resume recording

Simply press the START/STOP button.

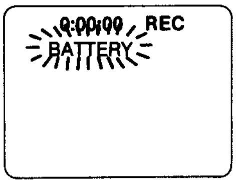
To turn the power off

Slide the CAMERA POWER switch to the right again.

NOTES ON CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

- During camera recording, do not touch the focus ring ⓐ or cover the white balance sensor ⓑ. E-7
- If there is insufficient light and the LOW LIGHT indicator is displayed on the viewfinder screen, the auto focusing and linear auto white balance do not operate properly. Add an appropriate light.
- The camera recording with automatic adjustment may not produce optimum results under certain conditions or ambient lighting. In this case, manually adjust the focus, white balance and iris. See pages 18,20 and 21.

E-8



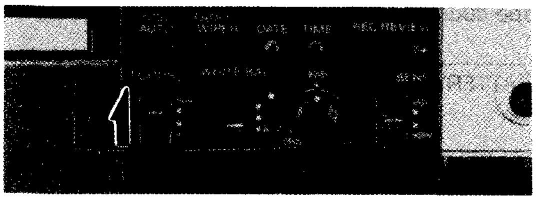
CAUTION INDICATORS ON THE VIEWFINDER SCREEN E-8

A caution indicator will be displayed below the tape counter on the viewfinder screen.

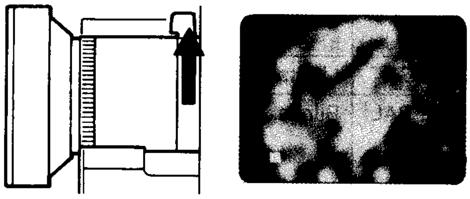
BATTERY	Blinks slowly, then rapidly.	The battery is exhausted.
TAPE END	Blinks slowly, then rapidly.	The tape approaches and then reaches its end.
CASSETTE	Blinks.	• No cassette inserted. • The safety tab is out.
LOW LIGHT	Lights.	Insufficient light
WHITE BAL	Blinks.	Auto white balance does not operate. (page 20)
DEW	Blinks.	Moisture condensation inside the unit. (page 31)
CAUTION	Blinks.	Moisture condensation on the tape surface. (page 31)

1-5. MANUAL FOCUSING

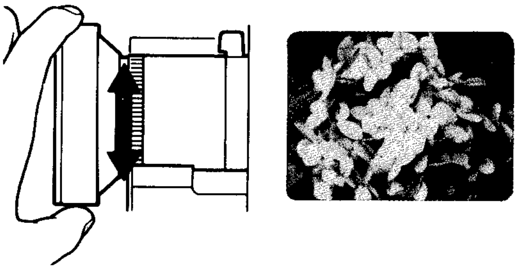
F-1



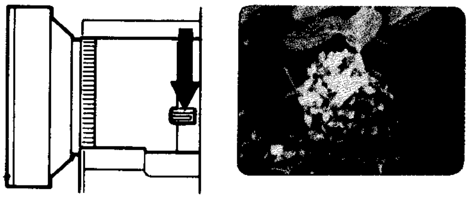
F-2



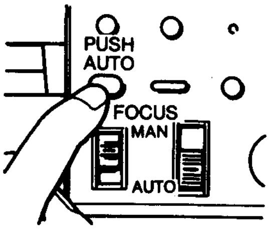
F-3



F-4



F-5



Auto focusing will be activated for almost any subject centered in the viewfinder. However, for some subjects listed on page 19, use manual focusing.

1 Set the FOCUS switch to MAN. F-1
The white mark appears at the bottom of the viewfinder screen.
2 Turn the manual zoom lever to the telephoto position (72) to make the subject as large as possible in the viewfinder. F-2
3 Turn the focus ring to achieve sharp focus. F-3
4 Set the desired shot length using the manual zoom lever. F-4

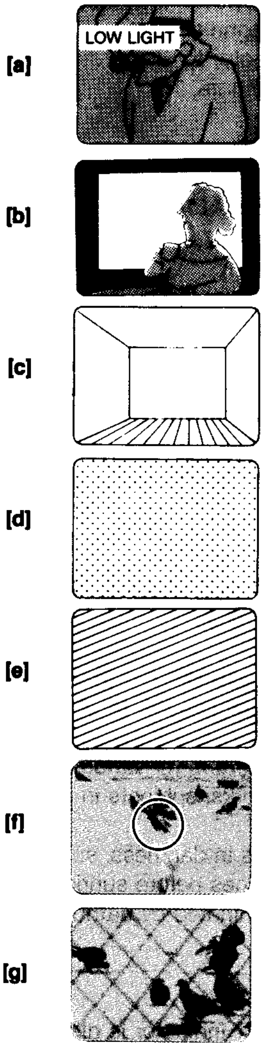
QUICK FOCUS ADJUSTMENT F-5

Press the PUSH AUTO button during recording in the manual focusing mode. Auto focusing will be activated only when the PUSH AUTO button is kept depressed.

SOME HELPFUL HINTS

- When shooting a scene with lots of movement in bright light, the subject can be kept in good focus regardless of movement by setting the zoom lever to 12 and the focus ring to 2 m.
- The figures on the focus ring indicate the distance between the subject and the ϕ mark on the side of the recorder body.
- When shooting in low lights situations, such as indoors, the depth of field for proper focus becomes very shallow. For best results, set the focus in telephoto, and shoot at wide angles.

F-6



DIFFICULT CONDITIONS FOR AUTO FOCUSING F-6

[a] Insufficient light
[b] Too much bright light behind the subject
[c] Subjects with flat colours and less contrast—wall, sky, etc.
[d] Finely detailed repetitive patterns
[e] Slant stripes
[f] When the distance between subjects at the center is extreme (e.g. one subject is close, the other is away)
[g] Subjects beyond screens, nets, etc. or when another subject passes across the camera

OTHER USES OF MANUAL FOCUSING

- When using special effects lenses or filters
- When shooting still subjects on a tripod
- To save battery wear
  (When the FOCUS switch is set to AUTO, the auto focusing operates to move the focus ring automatically even in recording pause mode. This causes the battery to wear continuously.)

For focusing in close-up shooting.

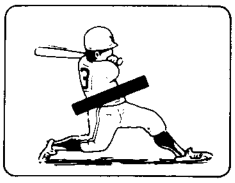
TCL AUTO FOCUSING SYSTEM

The TCL (Through Camera Lens) auto focusing system incorporated in this unit utilizes high-precision sensors to determine picture contrast at the center of the viewfinder screen and adjust focus accordingly for automatic, highly accurate focusing. F-7

Note

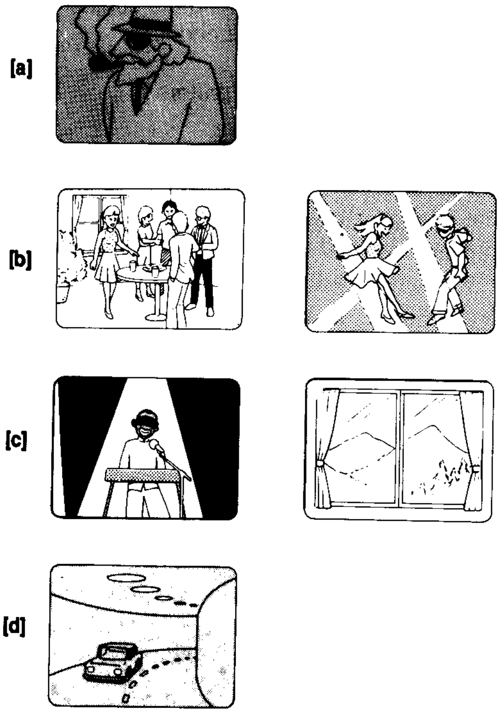
It may take several seconds to get focus when the camera is rapidly panned from a near subject to a distant subject with less contrast.

F-7

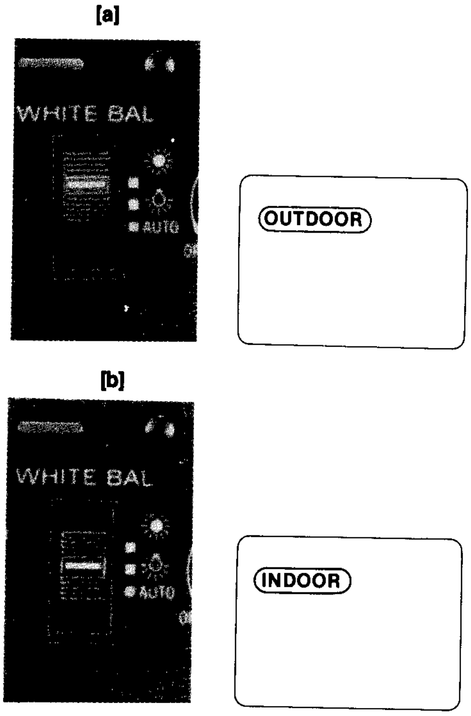


1-6. WHITE BALANCE

G-1



G-2



In most cases, the linear auto white balance function of this unit adjusts the white balance automatically. However, if it does not work correctly in the conditions listed below, set the WHITE BAL selector to ☀ or 💡 according to the lighting condition.

DIFFICULT CONDITIONS FOR LINEAR AUTO WHITE BALANCE G-1

[a] Insufficient light
[b] When lighting conditions change quickly
[c] When the light source for the subject is different from that illuminating this unit ex. when the subject is in a spotlight, or when the subject is outdoors but the camera is indoors, etc.
[d] Special light sources such as natrium lamps, etc.

HOW TO SET THE WHITE BAL SELECTOR G-2

[a] **Recording outdoors**—Set to ☀. (5,800 K)
[b] **Recording indoors**—Set to 💡. (3,200 K)

Recommended setting for various subjects
☀:sunset, fireworks, subjects in a sunny window, etc.
💡:candle flames in darkness, subjects in the spotlight, scenes before sunrise, subjects in a tunnel (illuminated by natrium lamps), neons, etc.

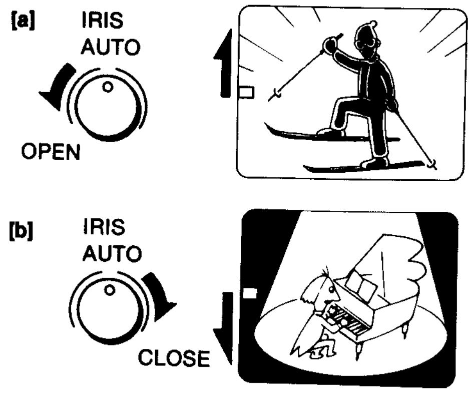
Note
If the LOW LIGHT indicator is displayed in the viewfinder, the OUTDOOR or INDOOR indicator does not appear.

WHAT IS THE WHITE BALANCE?
The colour of the subject being recorded can be affected by the ambient light. White balance adjustment is necessary for compensating for this colour variation, so that a white subject, for example, can be recorded white without reference to the light source.

LINEAR AUTO WHITE BALANCE SYSTEM
The auto white balance system of this unit utilizes the white balance sensor located below the built-in microphone to determine the colour temperature of the ambient light and adjust the white balance accordingly. As the ambient lighting condition changes gradually, such as in twilight, the white balance will be readjusted automatically. As the sensor is built in the unit, however, optimum white balance adjustment cannot be obtained if the subject and this unit are under different lighting conditions.

1-7. IRIS AND SENSITIVITY ADJUSTMENT

H



IRIS ADJUSTMENT H

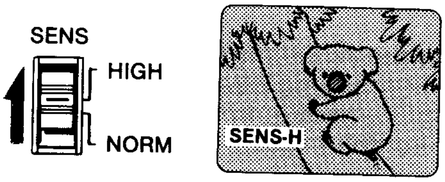
The iris is adjusted automatically with the IRIS control set to AUTO. When shooting a scene with strong contrast, adjust the IRIS control.

[a] When backlit shot results in the subject being too dark → Turn IRIS toward OPEN.
[b] When a subject is too bright against a dark background → Turn IRIS toward CLOSE.

When the IRIS control is turned, the white mark moves at the left side of the viewfinder screen.

After shooting that particular scene, reset the IRIS control to AUTO.

I

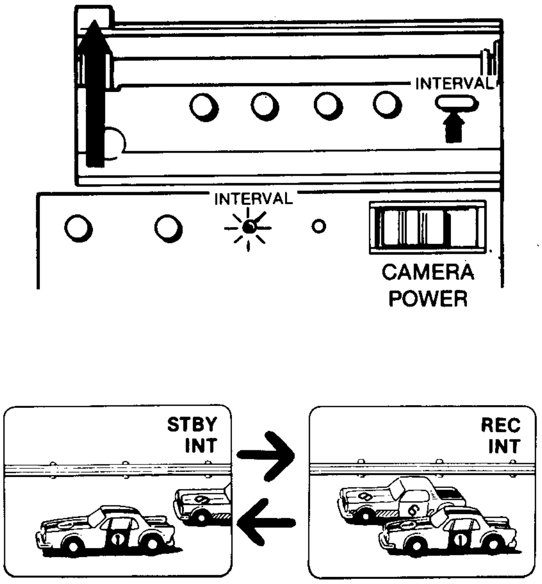


SENSITIVITY ADJUSTMENT I

When the entire scene is too dark and the subject is not clear, set the SENS selector to HIGH. The SENS H indicator appears on the viewfinder screen.
The subject can be recorded more clearly though the recorded picture may appear slightly noisy.
After shooting that paricular scene, reset the SENS selector to NORM.

1-8. AUTOMATIC INTERVAL RECORDING

L



L

A very short recording of 8 frames will be activated repeatedly at 15-second intervals, simply by pressing the INTERVAL button.

1 Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
2 Press the INTERVAL button.
The INTERVAL lamp will light and the unit will enter the interval recording mode.

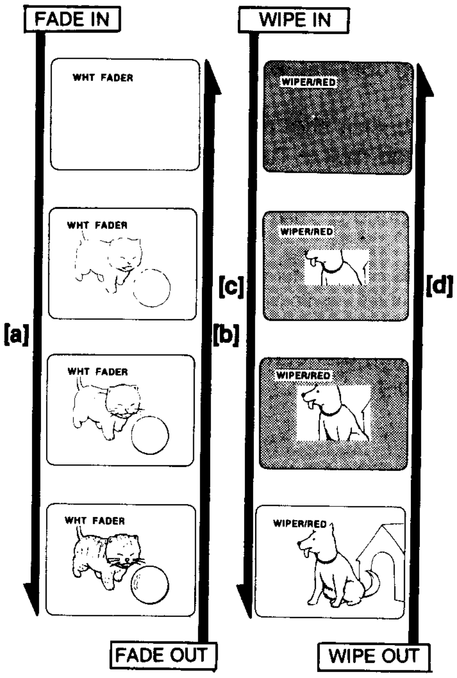
A very short recording of 8 frames will be made at 15-second intervals and the recording pause mode will resume. This procedure is repeated for approximately 30 minutes and then the unit will remain in the recording pause mode.

The pause mode will be released automatically after about 7 minutes and the unit will be turned off.

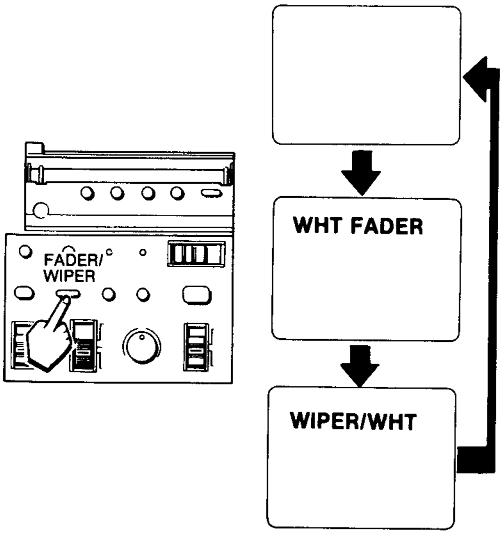
To stop the interval recording
Press the INTERVAL button to turn the INTERVAL lamp off.

1-9. FADER AND WIPER

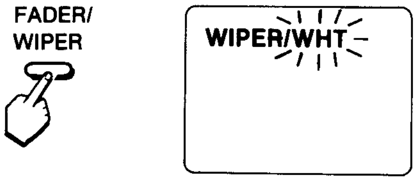
M-1



M-2



M-3



M-1

With the fader and wiper functions, you can add dramatic effects at the beginning, at the end, or in other portions of the video programme you are recording.

[a] **Fade In**—the picture and sound will come gradually from a white, silent scene.
[b] **Fade out**—the picture and sound will go out gradually until a white, silent scene is reached.
[c] **Wipe In**—the picture will become visible gradually from the center of the screen and the sound volume will increase.
[d] **Wipe out**—the picture will go out of sight gradually toward the center of the screen and the sound volume will decrease.

The colour of the fader is white only, while the colour of the wiper can be selected among 7 colours.

How to press the FADER/WIPER button

- Each time the FADER/WIPER button is pressed momentarily, the unit will be set to the following three modes consecutively. M-2

Normal mode → FADER mode → WIPER mode

- When the FADER/WIPER button is kept pressed for more than 3 seconds in any mode, the unit will enter the wiper colour setting mode. The colour indicator blinks on the viewfinder screen. M-3

FADER OPERATION

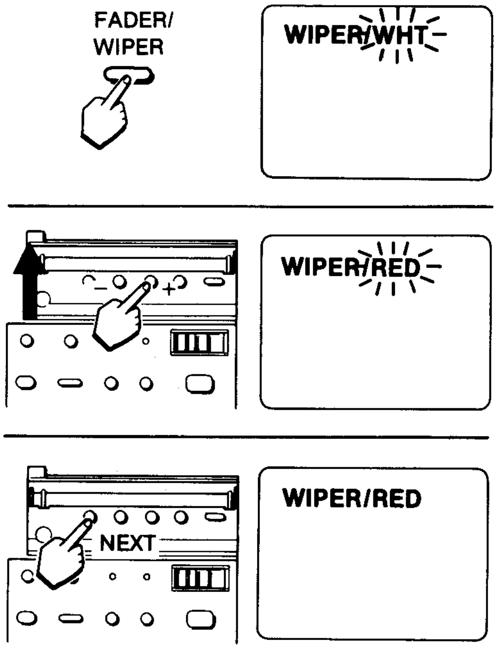
To fade In

1 Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
2 Press the FADER/WIPER button **once** to set the unit to FADER mode.
3 Press the START/STOP button to start camera recording.

To fade out

1 During camera recording, press the FADER/WIPER button **once** to set the unit to FADER mode.
2 Press the START/STOP button to stop recording.

M-4



WIPER OPERATION

To set the colour of the wiper M-4

1. Press the FADER/WIPER button **for more than 3 seconds** to set the unit to wiper colour setting mode.
2. Press the + or – button repeatedly until the desired colour indicator appears.

   WHT (white), BLUE, GRN (green), CYAN, RED, VIO (violet), YEL (yellow)

3. Press the NEXT button to memorize the setting.
   The colour indicator lights steadily.

To wipe in

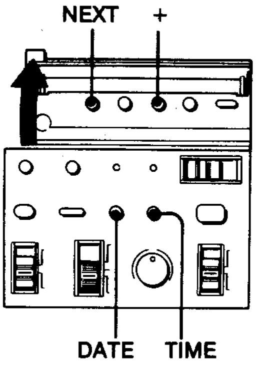
1. Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
2. Press the FADER/WIPER button **twice** to set the unit to WIPER mode.
3. Press the START/STOP button to start camera recording.

To wipe out

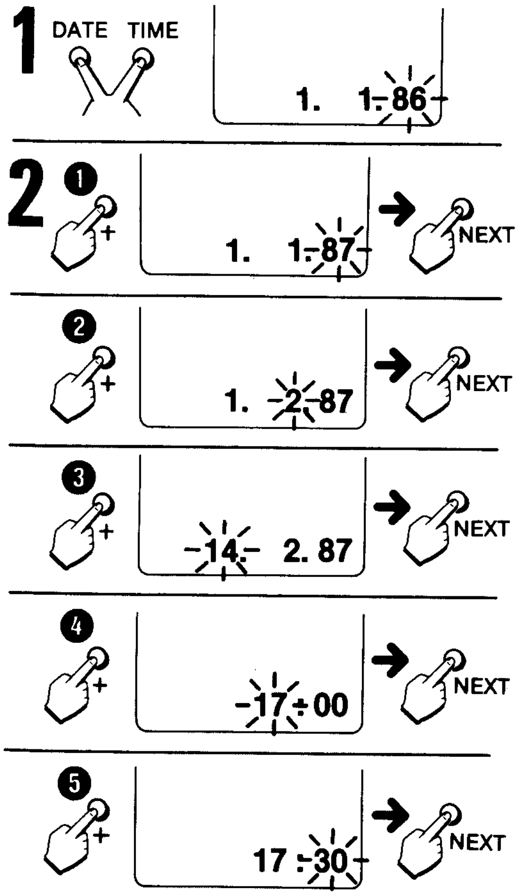
1. During camera recording, press the FADER/WIPER button **twice** to set the unit to WIPER mode.
2. Press the START/STOP button to stop recording.

1-10. RECORDING DATE OR TIME

N-1



N-2



Once the date and the current time are adjusted, the date or time can be recorded together with the picture.

Before setting the date and time

- Make sure that the lithium battery is installed. See page 12.
- Slide the CAMERA POWER switch to the right to set the unit to CAMERA mode. (If a cassette is inserted, the power will be turned off automatically in 7 minutes.)

DATE/TIME SETTING N-1

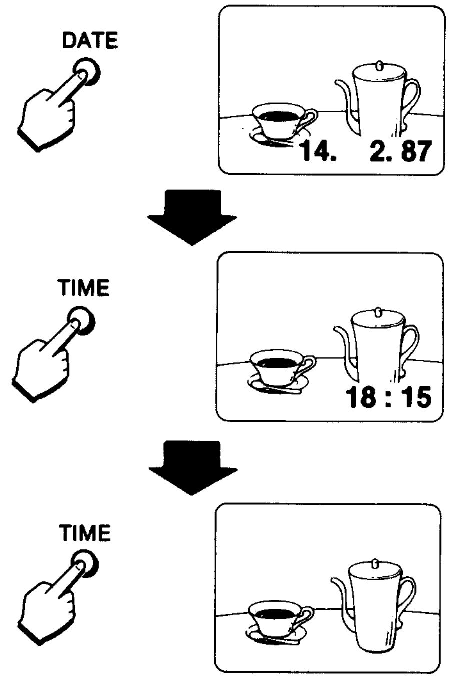
1. Press the DATE and TIME buttons simultaneously **for more than 3 seconds.** The date indication will appear on the viewfinder screen (date/time setting mode).
2. Adjust the year, month, day, hour and minute in sequence, following the illustration N-2. First adjust the blinking digits with the + button, and then press the NEXT button.
   ❶ Year: 86 = 1986, 00 = 2000
   ❷ Month
   ❸ Day
   ❹ Hour
   ❺ Minute
   After adjusting the minute digits, press the NEXT button at the same time with an announced time signal.

The time indication disappears and the clock starts operating. There is no need to readjust the date and time as long as the lithium battery remains.

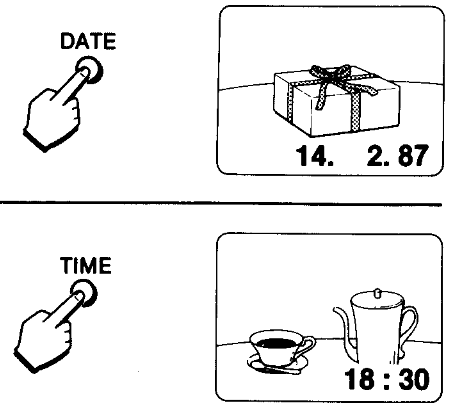
THE + BUTTON CAN BE PRESSED IN TWO WAYS:

- When you keep the button pressed, the digits will advance continuously.
- When you press and immediately release the button, the digits will advance by one.

N-3



N-4



To check the preset date and time N-3

1 Press the DATE button to display the date.
2 Press the TIME button to display the time.
3 Press the TIME button. The time indication goes off.

To readjust an incorrect date or time

Set the unit to date/time setting mode and press the NEXT button repeatedly until the incorrect digit blinks. Correct it with the + button and press the NEXT button until the time indication disappears.

TO RECORD THE DATE OR TIME N-4

During camera recording or in recording pause mode, press the DATE or TIME button to display the date or time on the viewfinder screen.
If the unit is set to recording mode, the date or time being displayed will be recorded together with the picture.

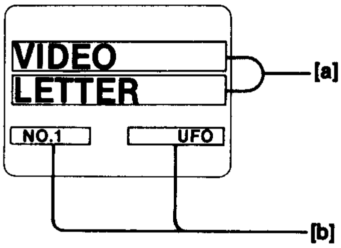
To stop recording the date or time, press the DATE or TIME button again. The picture recording will continue.

Note

The date or time can be recorded only during a camera recording. To insert the date or time while editing a tape, see "INSERT RECORDING" on page 30.

1-11. RECORDING A TITLE

O-1



A main title and a sub title can be created and recorded together with the picture.

O-1

[a] **Main title:** 10 characters × 2 lines, displayed in large characters
[b] **Sub title:** 6 + 8 characters, displayed in small characters

- Selectable colours:

  WHT (white), BLUE, GRN (green), CYAN, RED, VIO (violet), YEL (yellow)

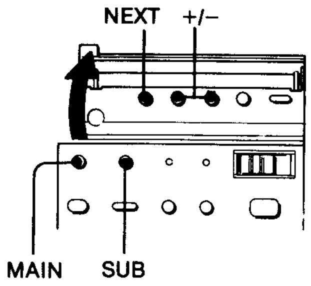
- Selectable characters:

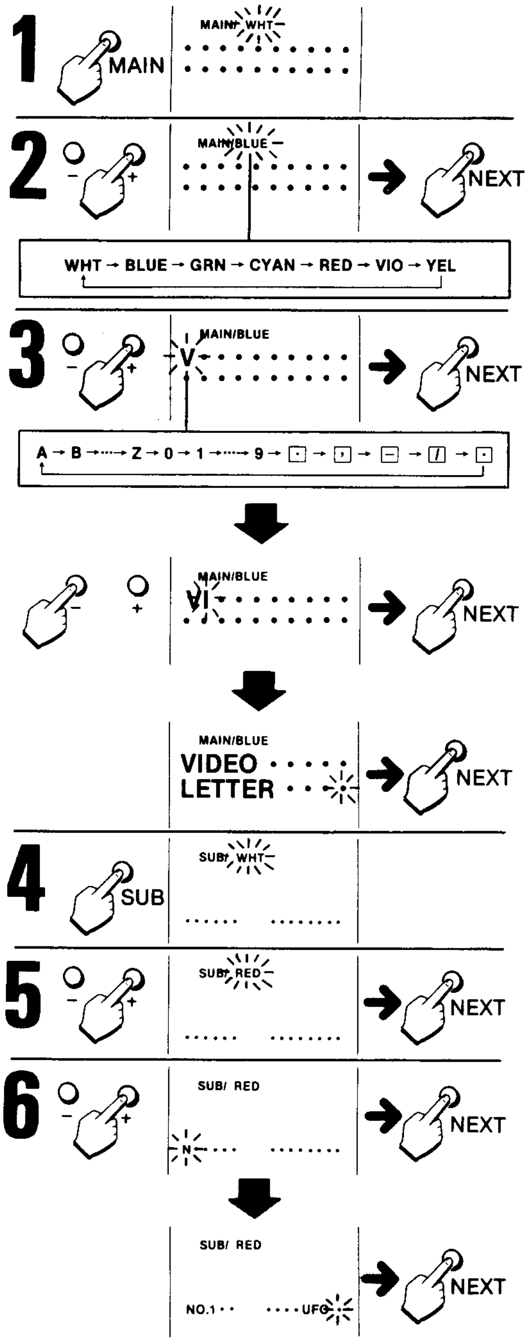
  alphabet, numerals, 4 symbols (period, apostrophe, hyphen and slash), space

Before setting the titles

- Make sure that the lithium battery is installed. See page 12.
- Slide the CAMERA POWER switch to the right to set the unit to CAMERA mode. (If a cassette is inserted, the power will be turned off automatically in 7 minutes.)
- Lift up the viewfinder lens for easier viewing.

O-2





TITLE SETTING O-2

1 Press the MAIN button **for more than 3 seconds.**
The MAIN title will appear on the viewfinder screen and the colour indicator will blink (main title setting mode).

2 Set the colour with the +/– buttons, and then press the NEXT button.

3 Set the characters one by one, with the +/– buttons and the NEXT button.*

When the last character is set, the main title will be memorized and disappear from the screen.

4 Press the SUB button **for more than 3 seconds.**
The SUB title will appear and the colour indicator will blink (sub title setting mode).

5 Set the colour with the +/– buttons, and then press the NEXT button.

6 Set the characters one by one, with the +/– buttons and the NEXT button.*

When the last character is set, the sub title will be memorized and disappear from the screen.

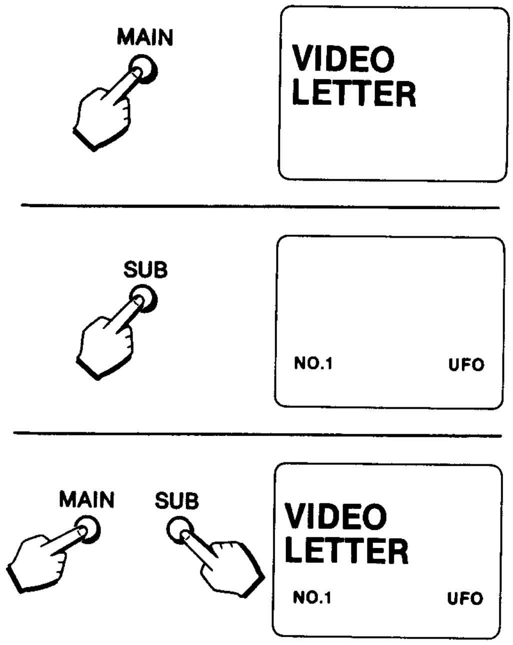
*To set a space, press the NEXT button without pressing the +/– buttons. The dot remains displayed during setting.

To check the title
To check the main title, press the MAIN button.
To check the sub title, press the SUB button.
To turn off the title, press the same button again.

To clear the title
Set the unit to the main or sub title setting mode and press the CLEAR button.

To change a part of the title
Set the unit to the main or sub title setting mode and press the NEXT button repeatedly until the desired character blinks. Change it with the +/– buttons and press the NEXT button until the title disappears.

O-3



TO RECORD THE TITLE O-3

During camera recording or in recording pause mode, press the MAIN button and/or SUB button to display the main title and/or sub title.
If the unit is set to recording mode, the title(s) will be recorded together with the picture.

To stop recording the title(s), press the MAIN button and/or SUB button. The picture recording will continue.

Note
The title can be recorded only during a camera recording. To insert a title while editing a tape, see “INSERT RECORDING” on page 30.

When recording the title in fader or wiper mode
In fader mode, the title will appear and disappear with the picture fade-in and fade-out.
In wiper mode, the title remains displayed while the picture is wiped in and wiped out.

- The colour of the title characters may be blurred or shifted when the tape is played back.
- Check the combination of the colours of the title and the wiper on the monitor screen.

1-12. FRAME RECORDING

A very short recording of 8 frames can be activated manually for creating an animated programme of your own.

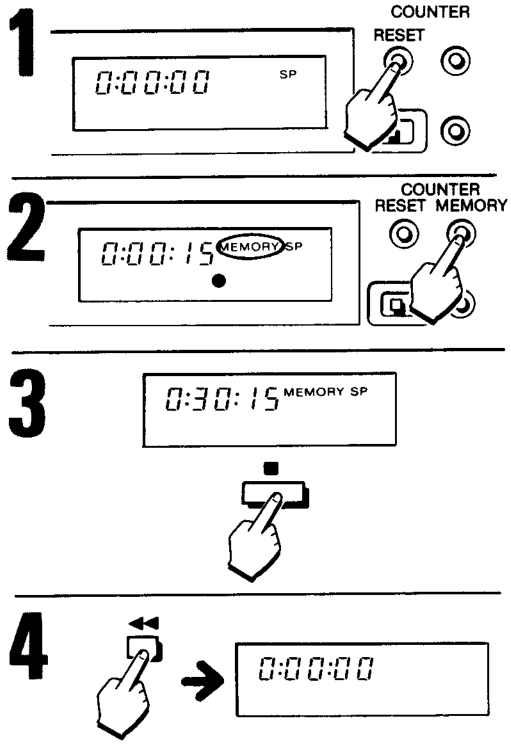
1 Press the VTR POWER switch and then slide the CAMERA POWER switch. The unit is set to recording pause mode.
2 Slide the REC switch to the right.
A recording of 8 frames will be made and the recording pause mode will resume.
3 Move the object a little and repeat step 2 as many times as you like.

When the recording pause mode lasts for more than approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

TO RECORD FROM A VTR
Make the necessary connections as described in editing from another VTR and press the VTR POWER switch.
Set the video camera recorder to recording pause mode and proceed to steps 2 and 3 above.

1-13. USE OF THE TAPE COUNTER

T



TO INDEX THE WHOLE TAPE

Press the RESET button at the beginning of the tape so that the counter shows "0:00:00". By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

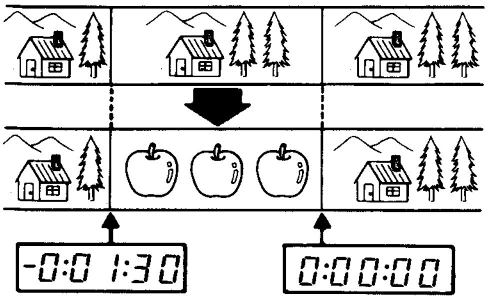
TO RETURN TO A PRE-REGISTERED POINT T

1 During recording or playback, press the RESET button at the point you later want to locate.
2 Press the MEMORY button and the "MEMORY" indicator will appear in the display window.
3 Press the ■ button, when the recording or playback has finished.
4 Press the ◀◀ or ▶▶ button.
The tape will be rewound or sent forward and stop automatically when the counter reaches "0:00:00".

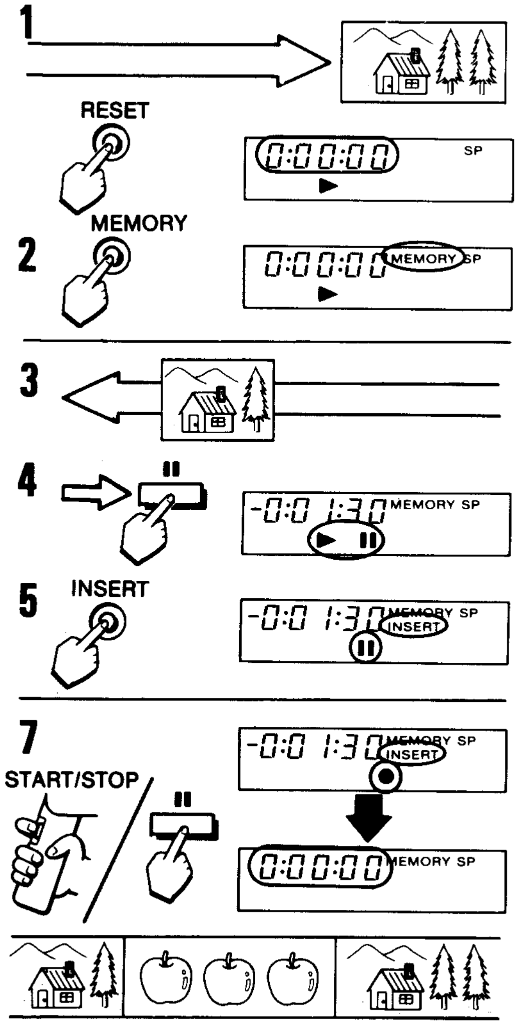
NOTES
- While the "MEMORY" indicator is displayed, the counter cannot be reset to "0:00:00", therefore, press the MEMORY button to cancel the function.
- The counter reading and the point of the tape may not correspond exactly (5 digits max.)
There may be more time lag when playing back a tape with LP- and SP-recorded programmes mixed.
- The counter serves as a rough time counter. 1 digit represents approximately 1 second.
- The counter will not advance during any blank portion of a tape.

1-14. INSERT RECORDING

W-1



W-2



You can insert (record) video and audio simultaneously from the camera, a TV or a VTR onto any recorded tape. W-1

PREPARATION

Connect the necessary equipment and prepare a programme source to be inserted. For details, refer to the corresponding page.

To insert camera recording [page 15]
Slide the CAMERA POWER switch to the right and then press the VTR POWER switch (VTR-CAMERA mode).

To insert a TV programme
Press the VTR POWER switch.

To insert a recording from a VTR
Press the VTR POWER switch.

Select the same recording mode in which the original tape was recorded.

OPERATION W-2

Monitor the playback picture of the recorded tape on the viewfinder screen.

1 Find the position for the end of the insert and press the RESET button. The counter returns to "0:00:00".
2 Press the MEMORY button. The "MEMORY" indicator appears in the display window.
3 Rewind the tape back a little further than the point where the insert should begin by pressing the ◀◀ button during playback.
4 Release the ◀◀ button to resume playback and press the ❚❚ button at the place where the insert should begin.
5 Press the INSERT button. The unit is set to the insert pause mode.
The INSERT and the ❚❚ indicators will appear.
6 Play the inserting source.
7 Start insert recording:
For camera recording, press the START/STOP button.
For other recording, press the ❚❚ button.

The insert recording will stop at the counter reading "0:00:00".

You can start an insert recording without registering the end point.
In this case, start operating from step 3. Proceed with the remaining steps and stop the insertion by pressing the ■ button.

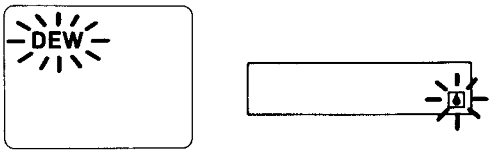
When the pause mode lasts for approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

Note
When the inserted tape is played back, the picture may be distorted at the end of the inserted part.

1-15. NOTES ON MOISTURE CONDENSATION

If the unit is brought directly from a cold to a warm location, moisture may condense inside the unit, on the surface of the tape or on the lens. In this condition, the tape may adhere to the head drum and damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the unit is furnished with moisture sensors.

X-1



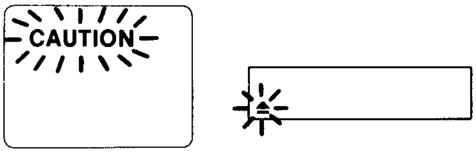
If moisture is present inside the recorder section X-1

When the power is turned on, the DEW indicator blinks in the viewfinder and the 💧 indicator blinks in the display window. No function button except the ⏏ switch will work.

Eject the cassette if present, and turn off the unit and let it sit with the cassette compartment open (at least for one hour).

The unit can be used again if none of the DEW and 💧 indicators appears when the power is turned on again.

X-2



If moisture is present on the surface of the tape X-2

When the tape is inserted and a tape transport button is pressed, the CAUTION indicator blinks in the viewfinder and the ⏏ indicator blinks in the display window. No function button except the ⏏ switch will work.

Eject the cassette and let the unit and the cassette sit at least for one hour.

The cassette can be used again if none of the CAUTION and ⏏ indicators appears when the cassette is inserted and a tape transport button is pressed.

If moisture is present on the lens

There are no caution indicator, but the lens becomes dim. Turn off the power and leave the unit unused at least for one hour.

1-16. TROUBLE INDICATORS

□ lighting ▨ blinking slow ■ blinking fast

Operating mode	CAMERA mode		VTR mode		VTR-CAMERA mode	
Cause	Viewfinder	Display window	Viewfinder	Display window	Viewfinder	Display window
The battery is weak.	▨ BATTERY	□ 🔋		□ 🔋	▨ BATTERY	□ 🔋
The tape is near its end.	▨ TAPE END	▨ 📼		▨ 📼	▨ TAPE END	▨ 📼
The tape is at its end.	■ [illegible]	■ [illegible]				
Moisture has condensed on the tape, etc.	■ [illegible]	■ ⏏		■ ⏏	■ CAUTION	■ ⏏
No cassette is inserted.	▨ CASSETTE	□ 📼		□ 📼	▨ CASSETTE	□ 📼
The tab on the cassette is out.	▨ CASSETTE	▨ 📼 ⏏				
Moisture has condensed inside the unit.	▨ DEW	■ 💧		■ 💧	▨ DEW	■ 💧
Light is insufficient.	□ LOW LIGHT				□ LOW LIGHT	
The linear auto white balance does not work.	▨ WHITE BAL				▨ WHITE BAL	

1-17. UNDERSTANDING LIGHT AND COLOUR

Brightness levels

The single greatest influence on picture quality is the brightness level. Using the following chart as a reference, take a few minutes to familiarize yourself with brightness levels to improve your recording.

	Unit: lux	
ND filter required		Snow-covered mountains Snow fields Sandy beach, clear day in summer Clear day, mid-day(100,000)
Normal recording	100,000	Clear day, mid-afternoon (35,000) Overcast day, mid-day (32,000)
	10,000	Overcast day, one hour after sunrise (2,000)
	1,000	Office lit by fluorescent lamps, near window (1,000) Clear day, one hour before sunset (1,000) Department store counter (500~700)
	500	Station wicket (650) Office lit by fluorescent lamps (400~500) Room lit by two 30 W fluorescent lamps (300)
Video light recommended	300	Subway station platform (300)
	100	Arcade at night (150~200)
Video light required		Theater lobby (15~35) Candle light (10~15)
	10	

When to use an ND filter

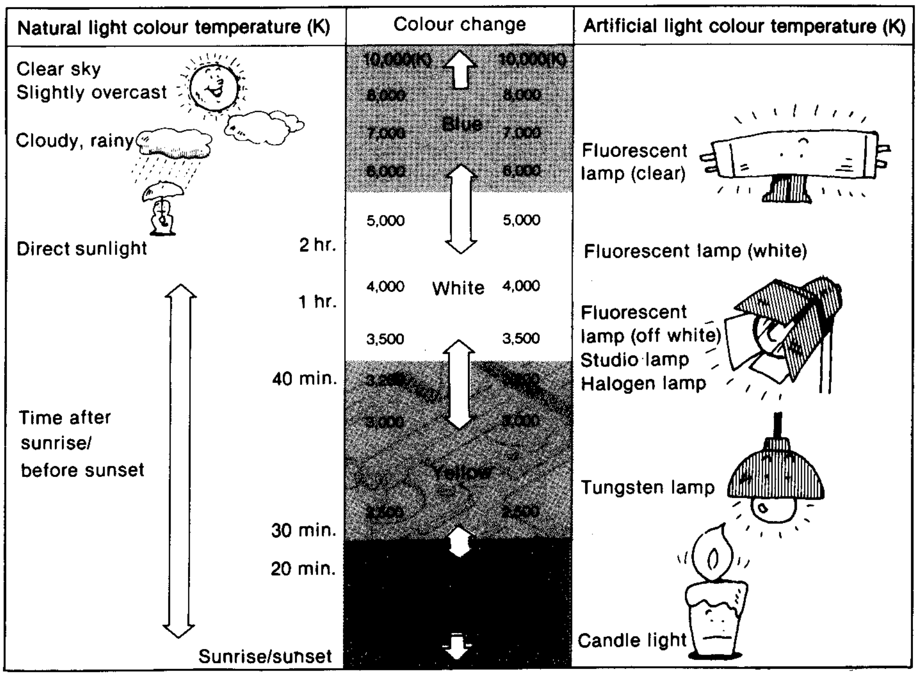
Exceptionally bright scenes such as sunny days at the beach in summer or on snow fields in winter will look "washed out" when recorded. To make these scenes recorded naturally, an ND filter is required. (Refer to the chart)

Three types are available—ND2, ND4, ND8—which reduce the exposure level to 1/2, 1/4, and 1/8, respectively.

Select filters to match the lens diameter of 52 mm.

Colour temperature—how it effects white balance adjustment

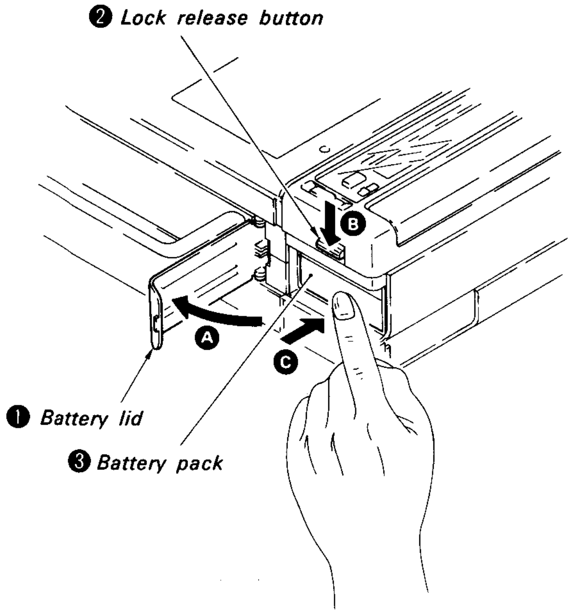
If the temperature of an object continues to increase, it will eventually begin giving off light. At this time, there is a fixed relationship between the object's temperature and its "light colour." The temperature of the object radiating the light is expressed in absolute temperature (K). This is also known as the colour temperature, which in turn stands for "light colour." As colour temperature increases, the light colour changes from red to yellow to white to blue.


Natural light colour temperature (K)
Colour change
Artificial light colour temperature (K)
Clear sky
Slightly overcast
Cloudy, rainy
Direct sunlight
2 hr.
1 hr.
40 min.
Time after sunrise/ before sunset
30 min.
20 min.
Sunrise/sunset
10,000(K)
10,000(K)
8,000
8,000
Blue
7,000
7,000
6,000
6,000
5,000
5,000
4,000
White
4,000
3,500
3,500
3,200
3,000
3,000
Yellow
2,500
2,500
Fluorescent lamp (clear)
Fluorescent lamp (white)
Fluorescent lamp (off white)
Studio lamp
Halogen lamp
Tungsten lamp
Candle light

SECTION 2
DISASSEMBLY

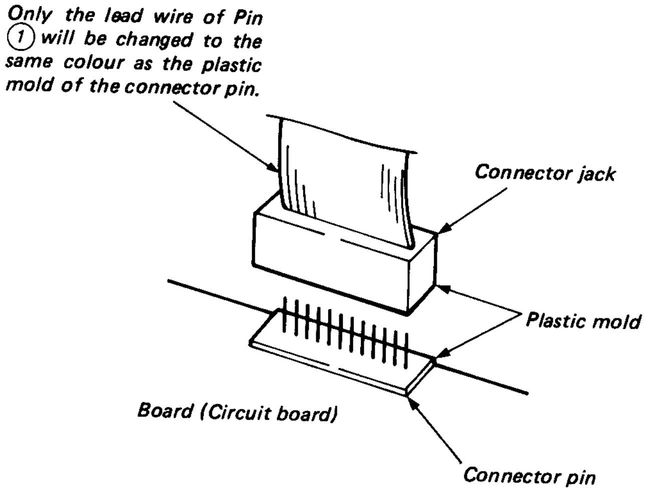
2-1. REMOVAL OF BATTERY PACK

1) Open battery lid ❶ in the direction of arrow 🅐.
2) Press deeply battery pack ❸ in the direction of arrow 🅒 until it clicks while pressing lock release button ❷ in the direction of arrow 🅑.
3) Take out battery pack ❸ which is pushed out by spring.


❷ Lock release button
🅑
🅐
🅒
❶ Battery lid
❸ Battery pack

Note: Caution to be exercised when connecting connector.

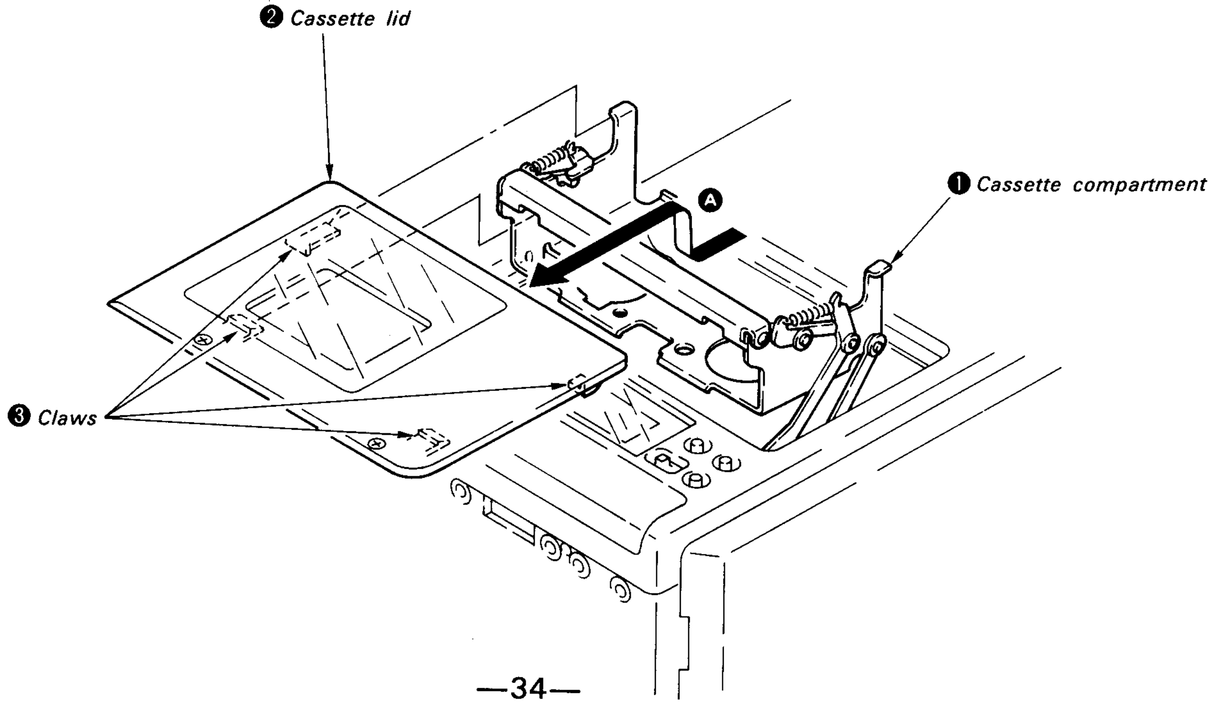
The colours of all the plastic molds of the connector jacks and connector pins had formerly been the same. However, hereafter the colour of the plastic mold of some of the connector jacks will be changed to white irrespective of the colour of the plastic molds of the connector pins. In this case, the colour of the lead wire of Pin ① becomes the same colour as the plastic mold of the connector pin.


Only the lead wire of Pin ① will be changed to the same colour as the plastic mold of the connector pin.
Connector jack
Plastic mold
Board (Circuit board)
Connector pin

2-2. REMOVAL OF CASSETTE LID

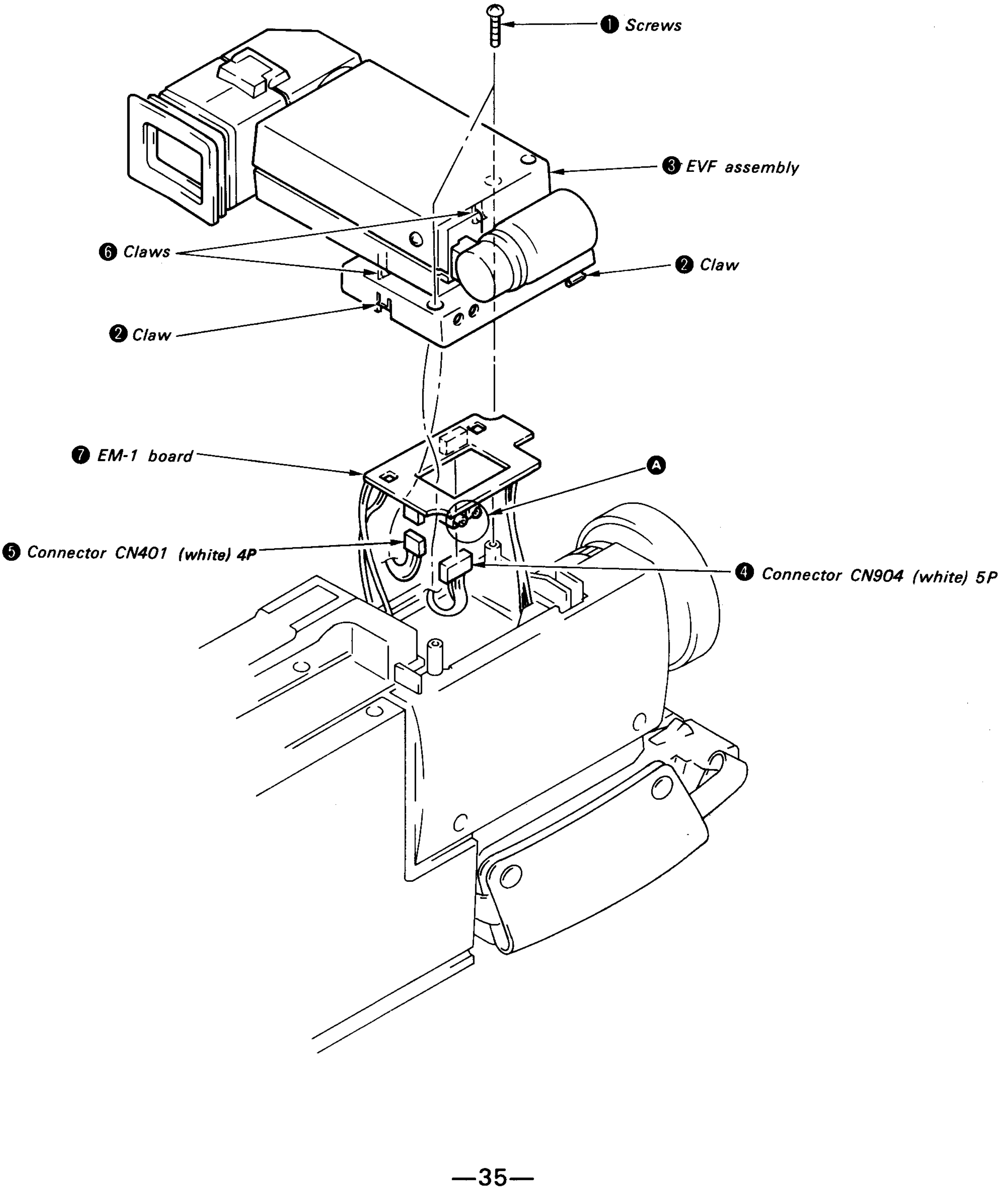
1) Turn ON the power supply, slide the EJECT knob, and make the cassette compartment ❶ into the up state.
2) Remove cassette lid ❷ by sliding in the direction of arrow 🅐.

Note: When setting cassette lid ❷, set the cassette lid so that respective claws ❸ put into the respective positions.


❷ Cassette lid
🅐
❶ Cassette compartment
❸ Claws

2-3. REMOVAL OF EVF (ELECTRONIC VIEW FINDER) ASSEMBLY

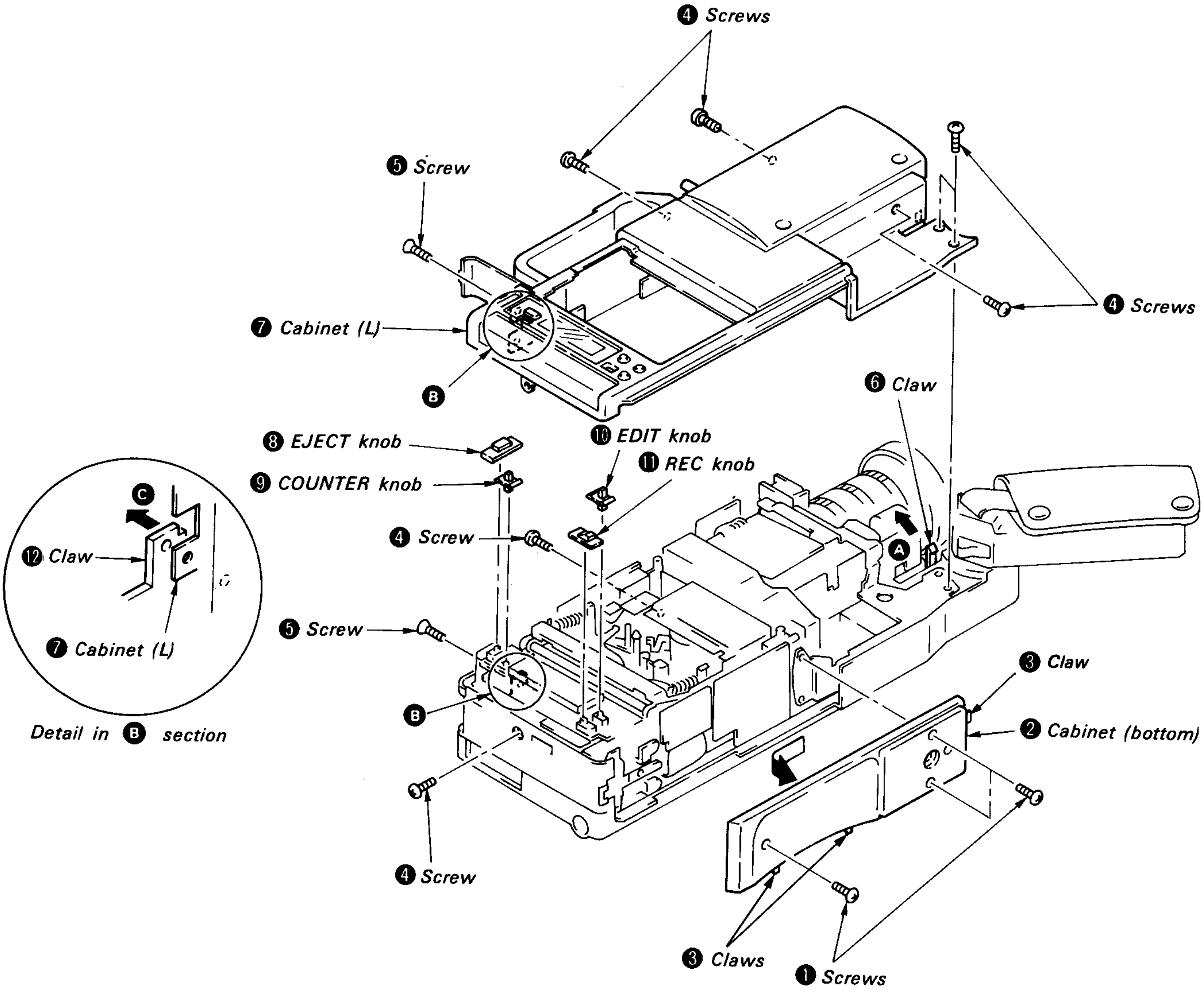
1) Remove two screws ❶.
2) Remove two claws ❷ and remove EVF assembly ❸.
3) Remove the connectors CN904 (white) ❹ and CN401 (white) ❺.
4) Remove two claws ❻ and remove EM-1 board ❼ by taking care to section 🅐.


❶ Screws
❸ EVF assembly
❻ Claws
❷ Claw
❷ Claw
❼ EM-1 board
🅐
❺ Connector CN401 (white) 4P
❹ Connector CN904 (white) 5P

2-4. REMOVAL OF CABINET

1) Remove cassette lid by referring to 2-2.
2) Remove EVF assembly by referring to 2-3.
3) Remove three screws ❶.
4) Remove cabinet (bottom) ❷ by shifting it in the direction of arrow while unhooking claws ❸.
5) Remove seven screws ❹ and two screws ❺.
6) While pressing claw ❻ in the direction of arrow 🅐, remove cabinet (L) ❼.
7) Remove EJECT knob ❽, COUNTER knob ❾, EDIT knob ❿, and REC knob ⓫.

Note: When installing cabinet (L) ❼, install it between the main body and claw ⓬ in the section 🅑 by opening it in the direction of arrow 🅒.


❹ Screws
❺ Screw
❹ Screws
❼ Cabinet (L)
🅑
❻ Claw
❽ EJECT knob
❾ COUNTER knob
❿ EDIT knob
⓫ REC knob
🅒
⓬ Claw
❼ Cabinet (L)
❹ Screw
🅐
❺ Screw
❸ Claw
🅑
❷ Cabinet (bottom)
❹ Screw
❸ Claws
❶ Screws

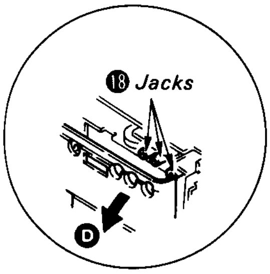
Detail in 🅑 section

8) Remove four screws ⑬ .

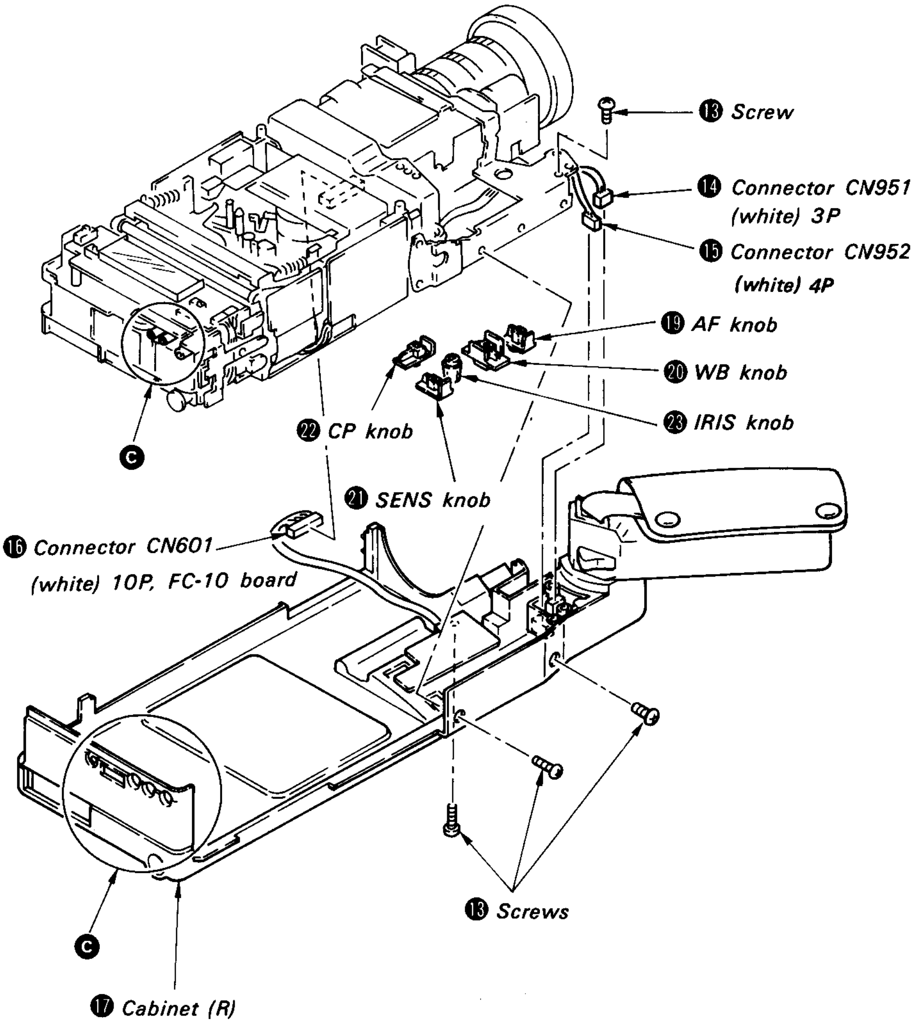
9) Remove the connectors CN951 (white) ⑭ , CN952 (white) ⑮ and CN601 (white) ⑯ .

10) Remove cabinet (R) ⑰ in section Ⓒ by opening it widely in the direction of arrow Ⓓ while releasing it from jack ⑱ .

11) Remove AF knob ⑲ , WB knob ⑳ , SENS knob ㉑ , CP knob ㉒ and IRIS knob ㉓ .

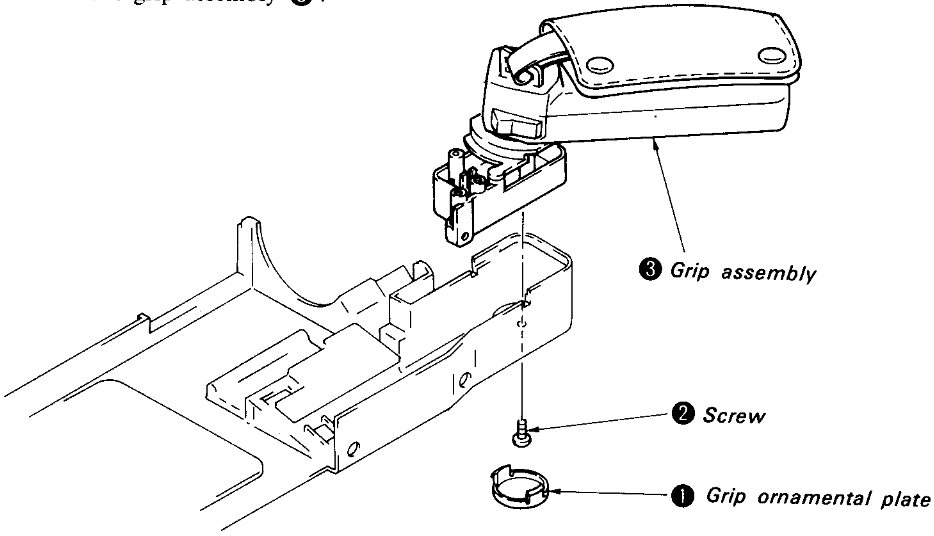


Detail in Ⓒ section


⑬ Screw
⑭ Connector CN951 (white) 3P
⑮ Connector CN952 (white) 4P
⑲ AF knob
⑳ WB knob
㉓ IRIS knob
㉒ CP knob
Ⓒ
㉑ SENS knob
⑯ Connector CN601 (white) 10P, FC-10 board
⑬ Screws
Ⓒ
⑰ Cabinet (R)

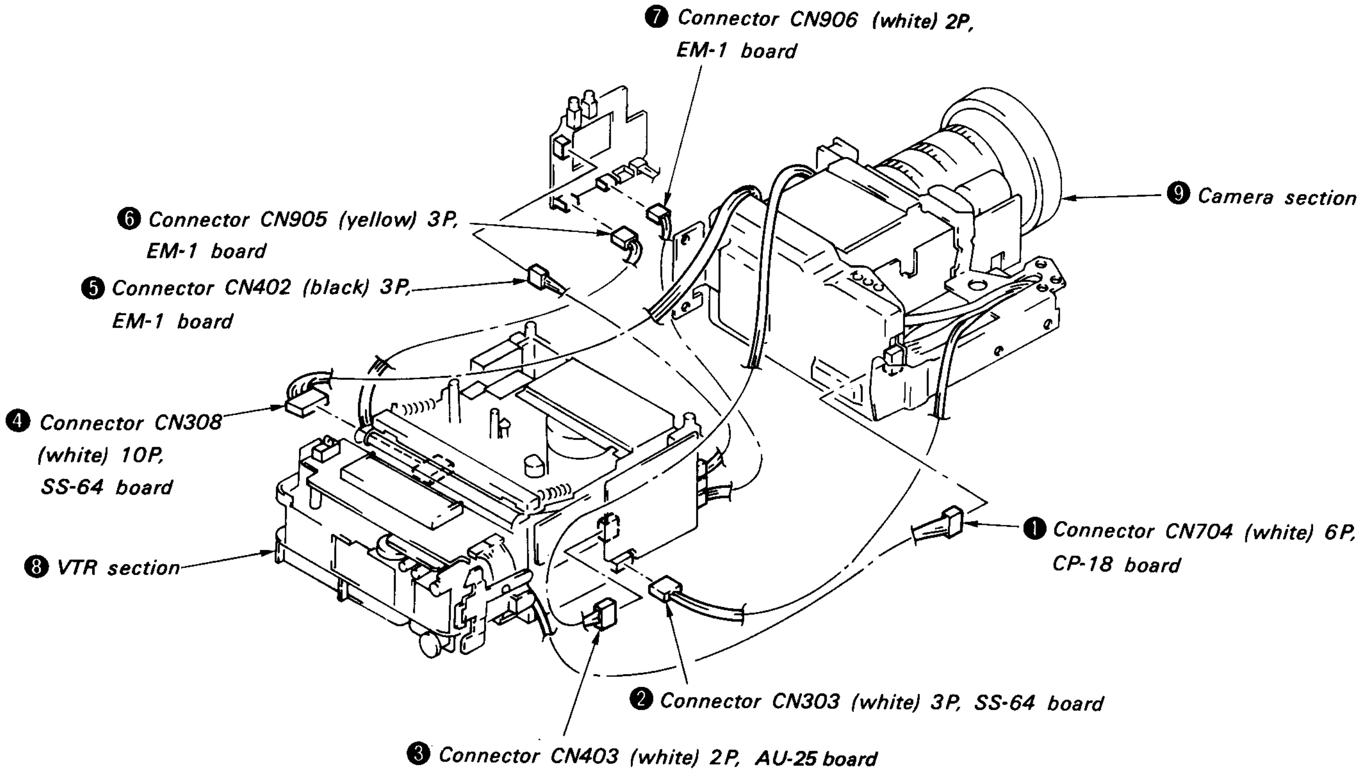
2-5. REMOVAL OF GRIP ASSEMBLY

1) Remove cabinet (R) by referring to 2-4.
2) Remove grip ornamental plate ❶.
3) Remove screw ❷ and remove grip assembly ❸.


❸ Grip assembly
❷ Screw
❶ Grip ornamental plate

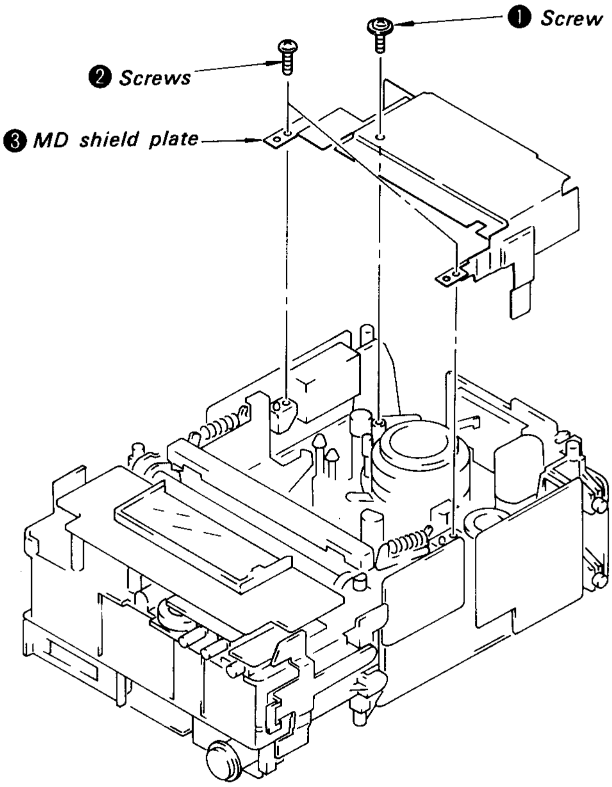
2-6. SEPARATION OF VTR SECTION AND CAMERA SECTION

1) Remove connectors CN704 (white) ❶, CN303 (white) ❷, CN403 (white) ❸, CN308 (white) ❹, CN402 (black) ❺, CN905 (yellow) ❻ and CN906 (white) ❼.
2) Separate VTR section ❽ and camera section ❾.


❼ Connector CN906 (white) 2P, EM-1 board
❾ Camera section
❻ Connector CN905 (yellow) 3P, EM-1 board
❺ Connector CN402 (black) 3P, EM-1 board
❹ Connector CN308 (white) 10P, SS-64 board
❽ VTR section
❶ Connector CN704 (white) 6P, CP-18 board
❷ Connector CN303 (white) 3P, SS-64 board
❸ Connector CN403 (white) 2P, AU-25 board

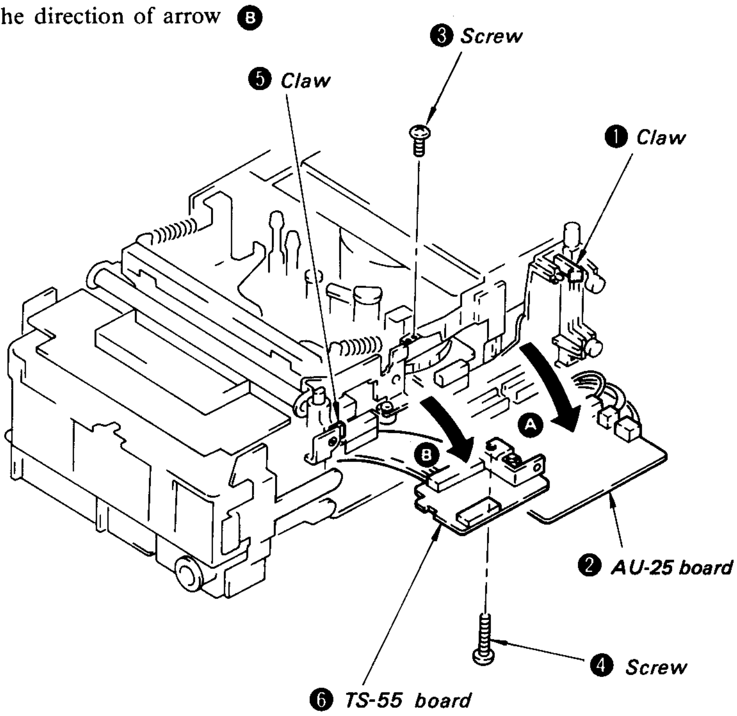
2-7. REMOVAL OF MD SHIELD PLATE

1) Remove screw ❶ and two screws ❷ and remove MD shield plate ❸.


❶ Screw
❷ Screws
❸ MD shield plate

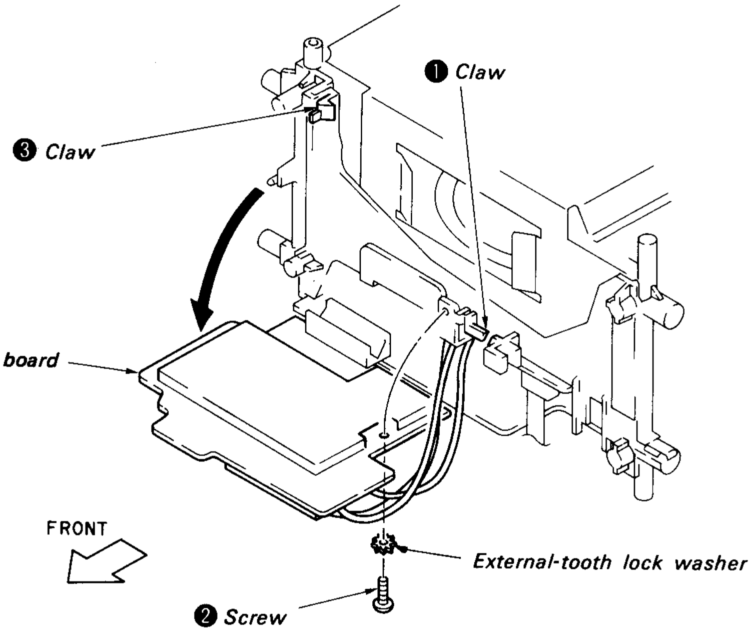
2-8. OPENING OF THE AU-25 BOARD AND THE TS-55 BOARD

1) Remove claw ❶ and open the AU-25 board ❷ in the direction of arrow Ⓐ. (Do not care the opening sound.)
2) Remove screws ❸ and ❹.
3) Open the TS-55 board ❻ in the direction of arrow Ⓑ while removing claw ❺.


❸ Screw
❺ Claw
❶ Claw
Ⓐ
Ⓑ
❷ AU-25 board
❹ Screw
❻ TS-55 board

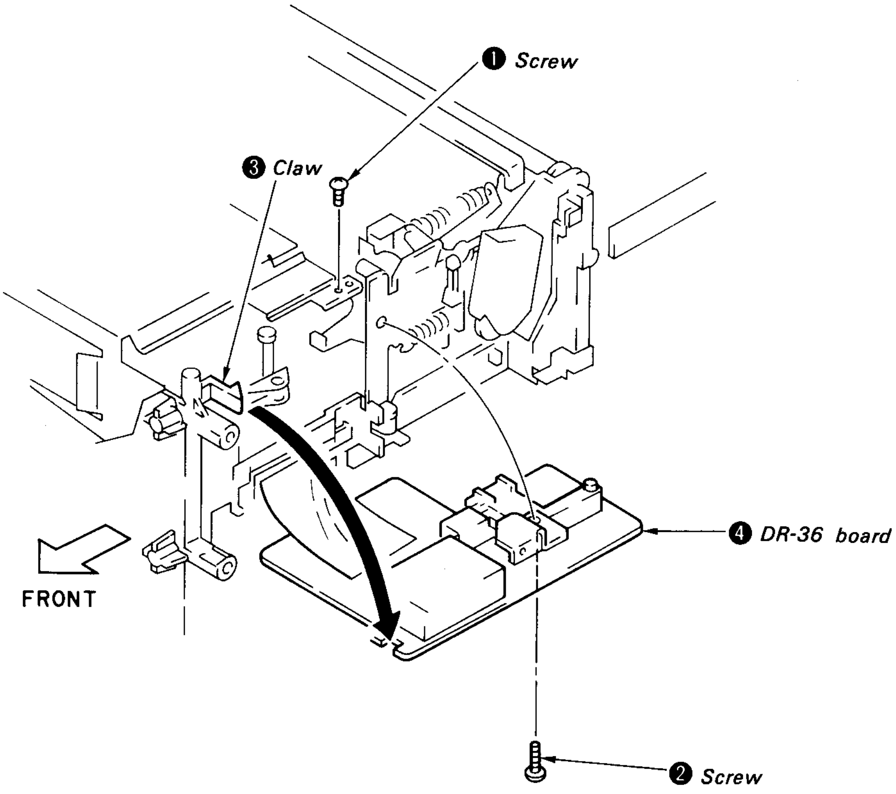
2-9. OPENING OF THE RP-40 BOARD

1) Remove the harness from claw ❶.
2) Remove screw ❷.
3) Remove claw ❸ and open the RP-40 board ❹ in the direction of arrow. (Do not care the opening sound.)


❶ Claw
❸ Claw
❹ RP-40 board
FRONT
External-tooth lock washer
❷ Screw

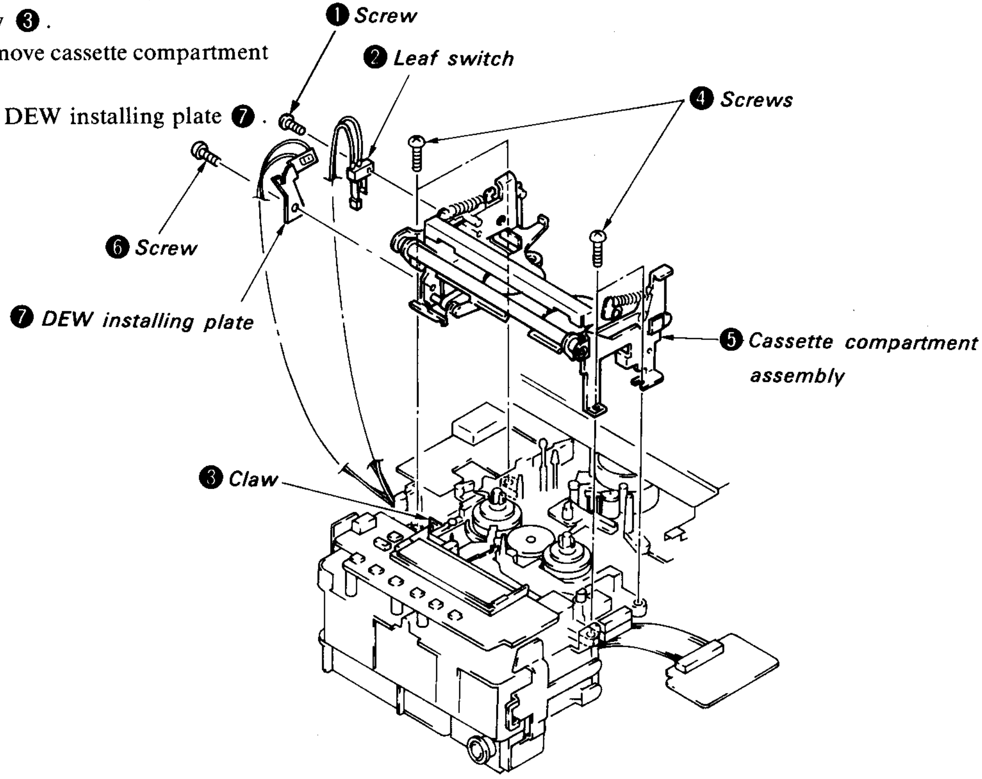
2-10. OPENING OF THE DR-36 BOARD

1) Remove screws ❶ and ❷.
2) Remove claw ❸ and open the DR-36 board ❹ in the direction of arrow.


❶ Screw
❸ Claw
❹ DR-36 board
FRONT
❷ Screw

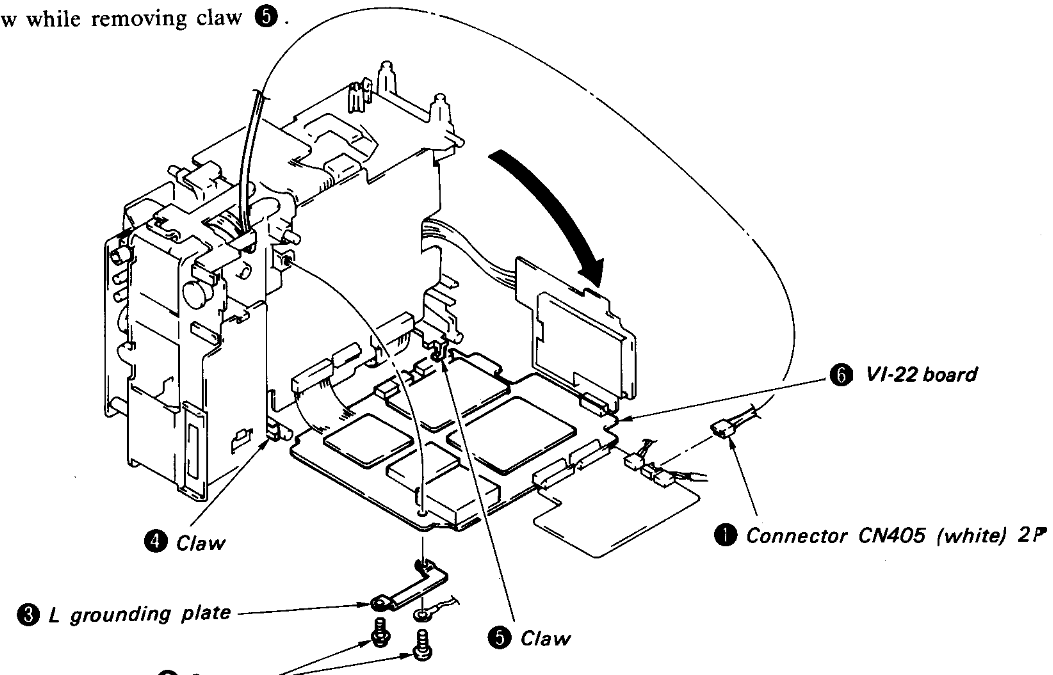
2-11. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY

1) Open the TS-55 board by referring to 2-8.
2) Open the DR-36 board by referring to 2-10.
3) Remove screw ❶ and remove leaf switch ❷.
4) Remove the harness from claw ❸.
5) Remove four screws ❹ and remove cassette compartment assembly ❺.
6) Remove screw ❻ and remove DEW installing plate ❼.


❶ Screw
❷ Leaf switch
❹ Screws
❻ Screw
❼ DEW installing plate
❺ Cassette compartment assembly
❸ Claw

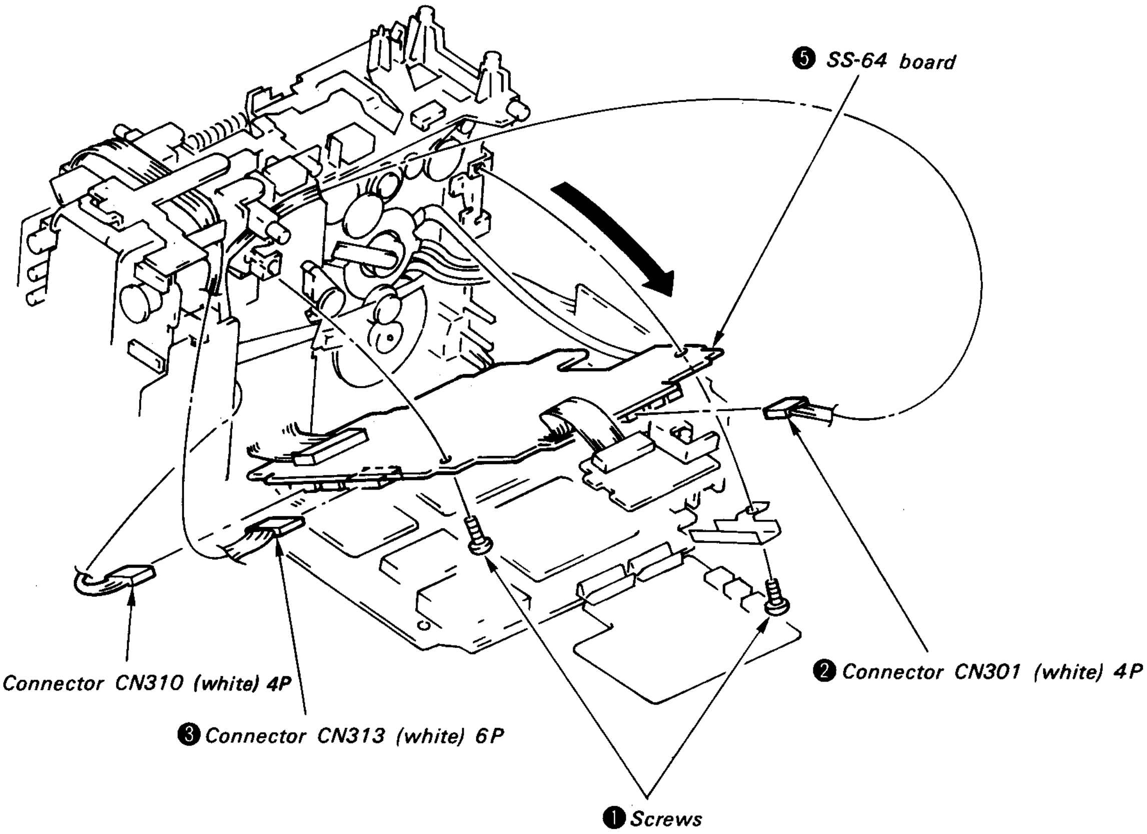
2-12. OPENING OF THE VI-22 BOARD

1) Open the AU-25 board by referring to 2-8.
2) Open the RP-40 board by referring to 2-9.
3) Remove connector CN405 (white) ❶.
4) Remove two screws ❷ and remove L grounding plate ❸.
5) Remove claw ❹ and open the VI-22 board ❻ in the direction of arrow while removing claw ❺.


❻ VI-22 board
❹ Claw
❶ Connector CN405 (white) 2P
❸ L grounding plate
❺ Claw
❷ Screws

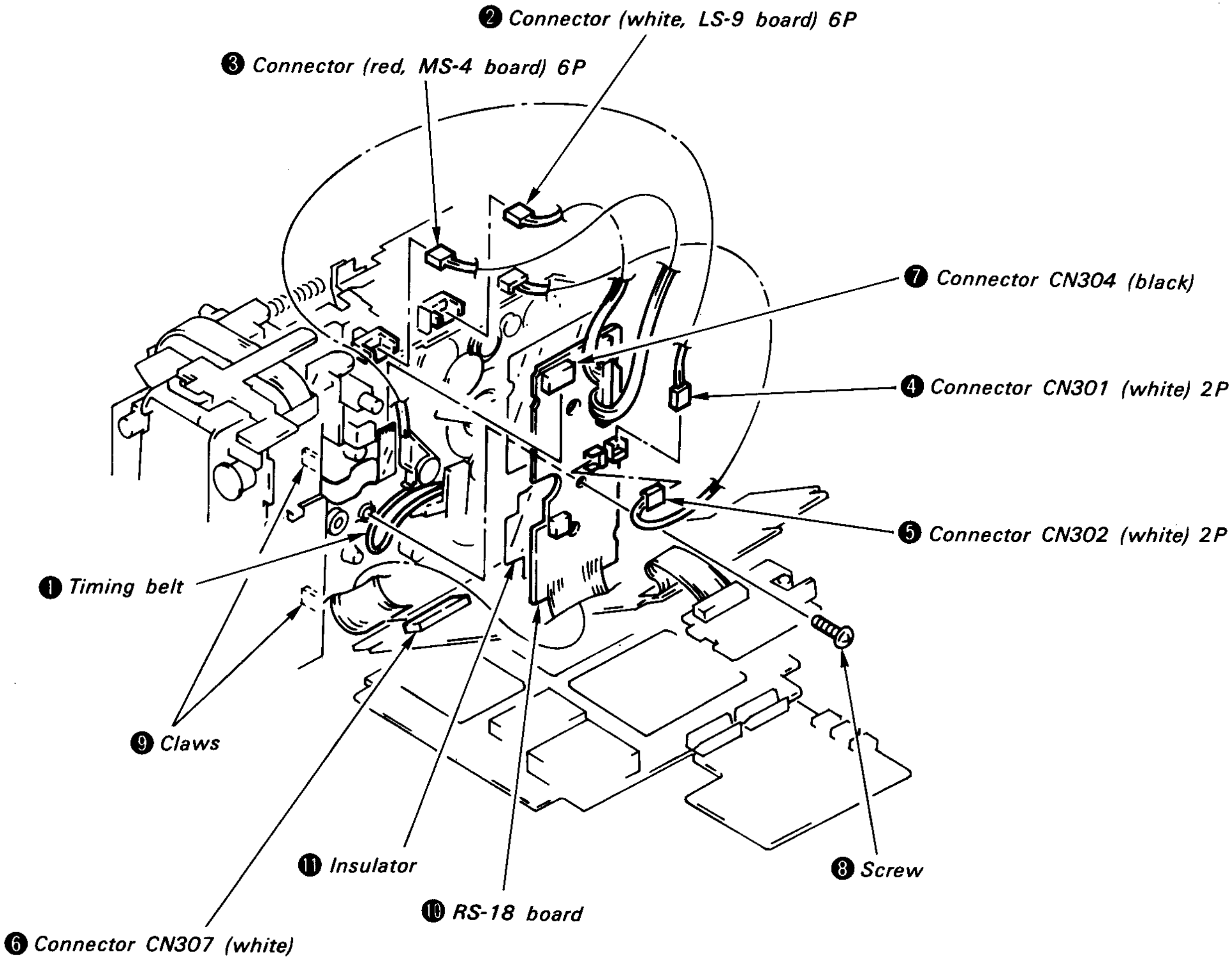
2-13. OPENING OF THE SS-64 BOARD

1) Open the VI-22 board by referring to 2-12.
2) Open the TS-55 board by referring to 2-8.
3) Remove two screws ❶.
4) Remove connectors CN301 (white) ❷, CN313 (white) ❸ and CN310 (white) ❹.
5) Open the SS-64 board ❺ in the direction of arrow.


❺ SS-64 board
❹ Connector CN310 (white) 4P
❸ Connector CN313 (white) 6P
❷ Connector CN301 (white) 4P
❶ Screws

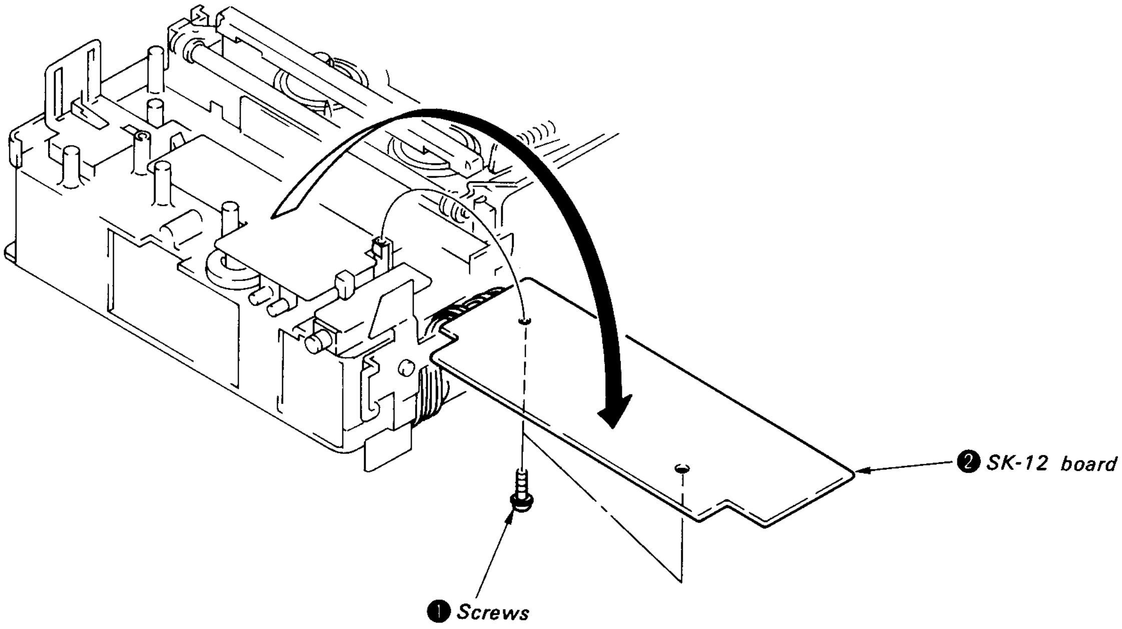
2-14. REMOVAL OF THE RS-18 BOARD

1) Open the SS-64 board by referring to 2-13.
2) Remove timing belt ❶ from the pulley.
3) Remove connectors ❷ (white, LS-9 board), ❸ (red, MS-4 board), CN301 (white) ❹, CN302 (white) ❺, CN307 (white) ❻ and CN304 (black) ❼.
4) Remove screw ❽.
5) Remove the RS-18 board ❿ while removing two claws ❾.
6) Remove insulator ⓫.


❷ Connector (white, LS-9 board) 6P
❸ Connector (red, MS-4 board) 6P
❼ Connector CN304 (black)
❹ Connector CN301 (white) 2P
❺ Connector CN302 (white) 2P
❶ Timing belt
❾ Claws
⓫ Insulator
❽ Screw
❿ RS-18 board
❻ Connector CN307 (white)

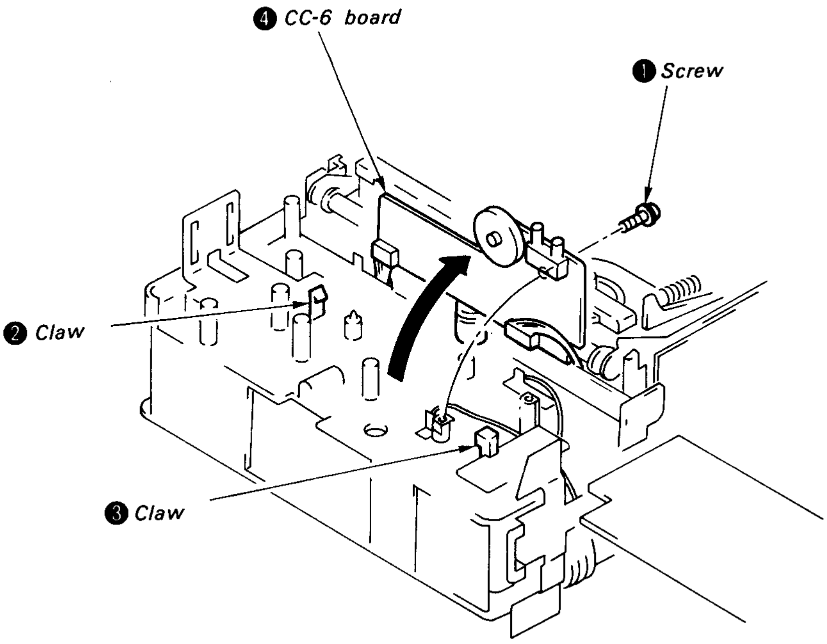
2-15. OPENING OF THE SK-12 BOARD

1) Remove two screw ❶ and open the SK-12 board ❷ in the direction of arrow.


❷ SK-12 board
❶ Screws

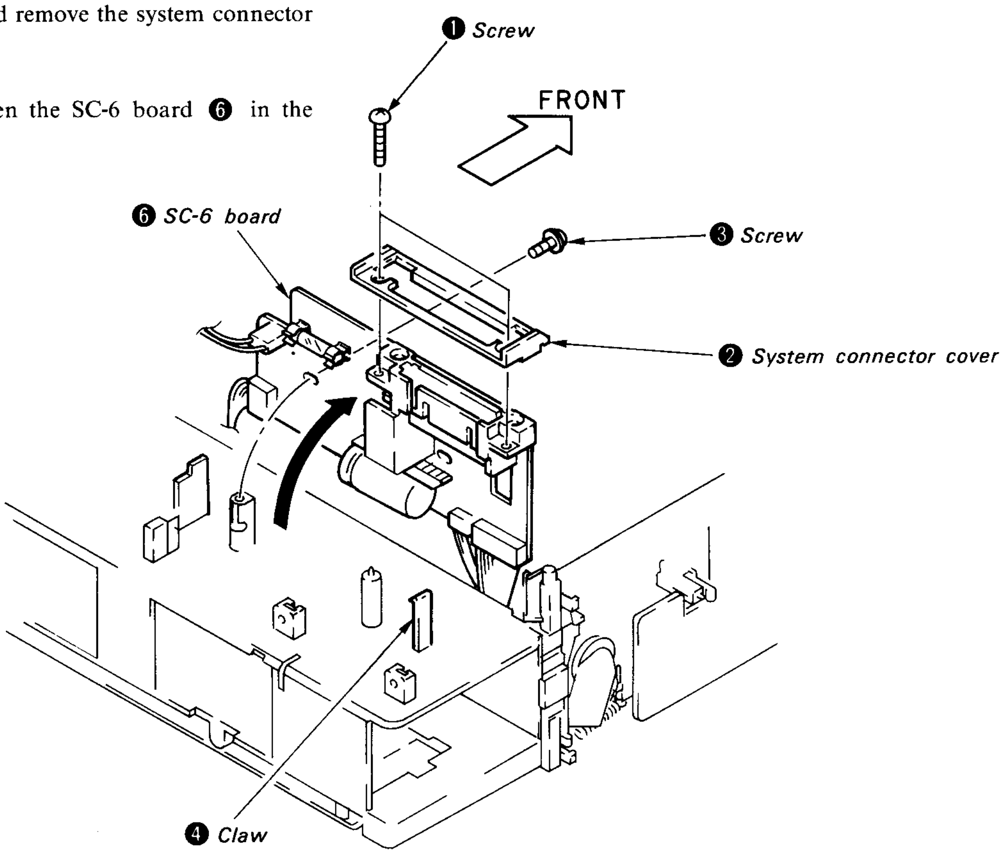
2-16. OPENING OF THE CC-6 BOARD

1) Open the SK-12 board by referring to 2-15.
2) Remove screw ❶.
3) Remove claw ❷ and open the CC-6 board ❹ in the direction of arrow while removing claw ❸.


❹ CC-6 board
❶ Screw
❷ Claw
❸ Claw

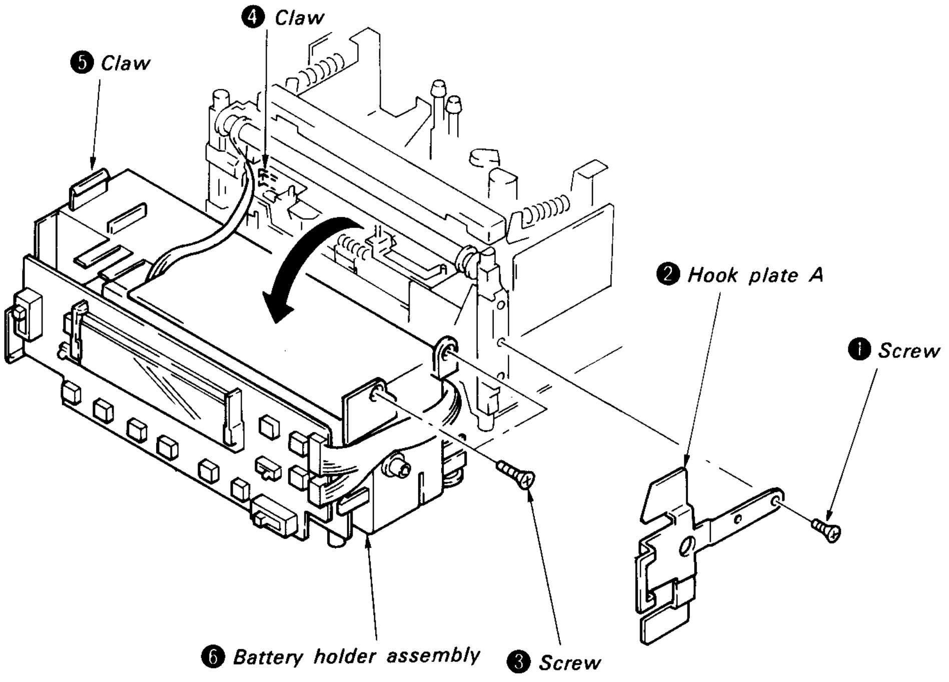
2-17. OPENING OF THE SC-6 BOARD

1) Remove two screws ❶ and remove the system connector cover ❷.
2) Remove screw ❸.
3) Remove claw ❹ and open the SC-6 board ❻ in the direction of arrow.


❶ Screw
FRONT
❻ SC-6 board
❸ Screw
❷ System connector cover
❹ Claw

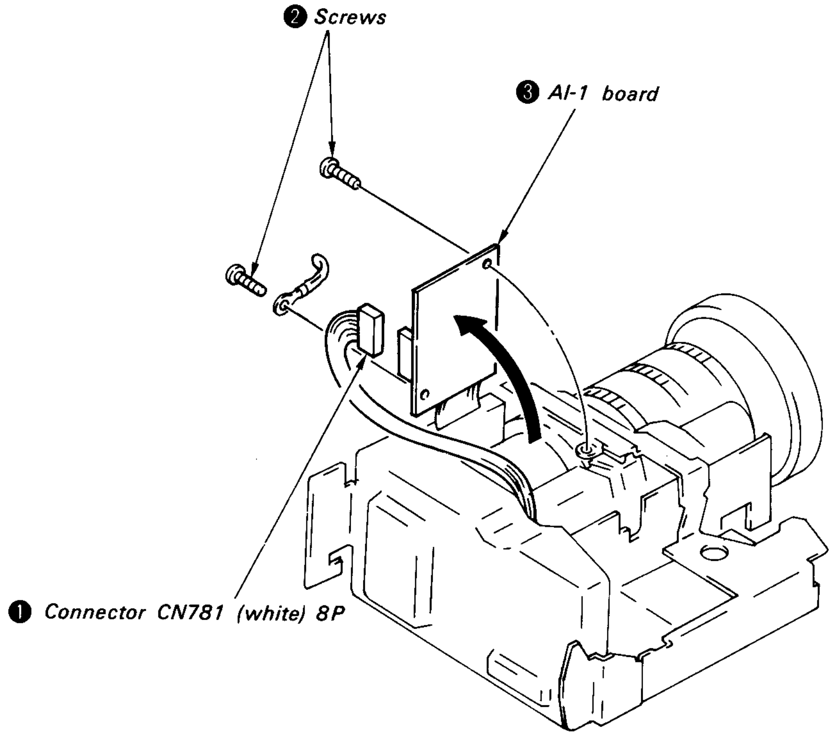
2-18. OPENING OF THE BATTERY HOLDER ASSEMBLY

1) Remove screw ❶ and remove the hook plate A ❷.
2) Remove two screws ❸.
3) Remove the harness from claw ❹.
4) Open the battery holder assembly ❻ while removing claw ❺.


❹ Claw
❺ Claw
❷ Hook plate A
❶ Screw
❻ Battery holder assembly
❸ Screw

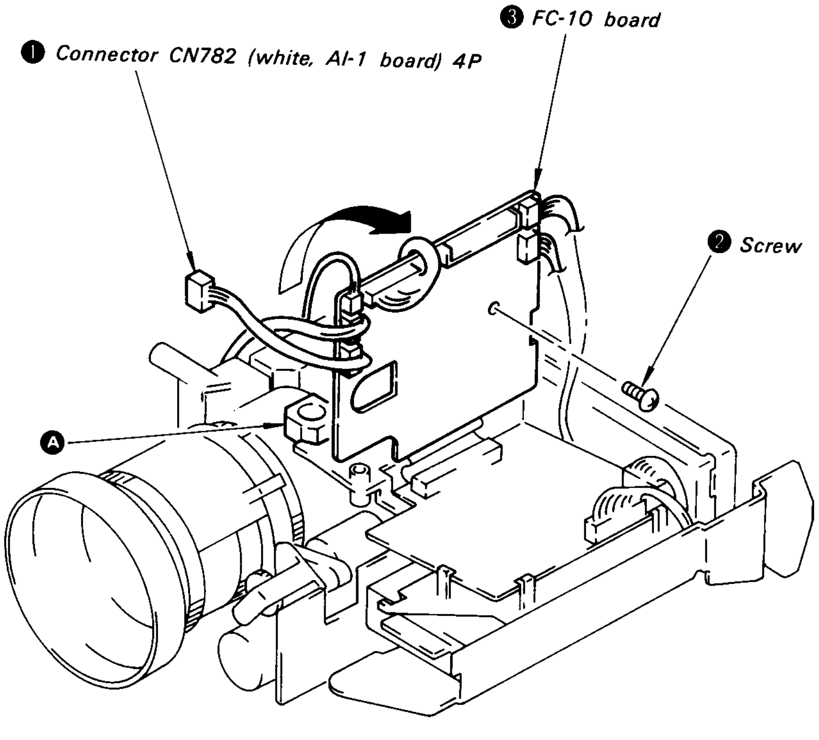
2-19. OPENING OF THE AI-1 BOARD

1) Remove connector CN781 (white) ❶.
2) Remove two screws ❷ and open the AI-1 board ❸ in the direction of arrow.


❷ Screws
❸ AI-1 board
❶ Connector CN781 (white) 8P

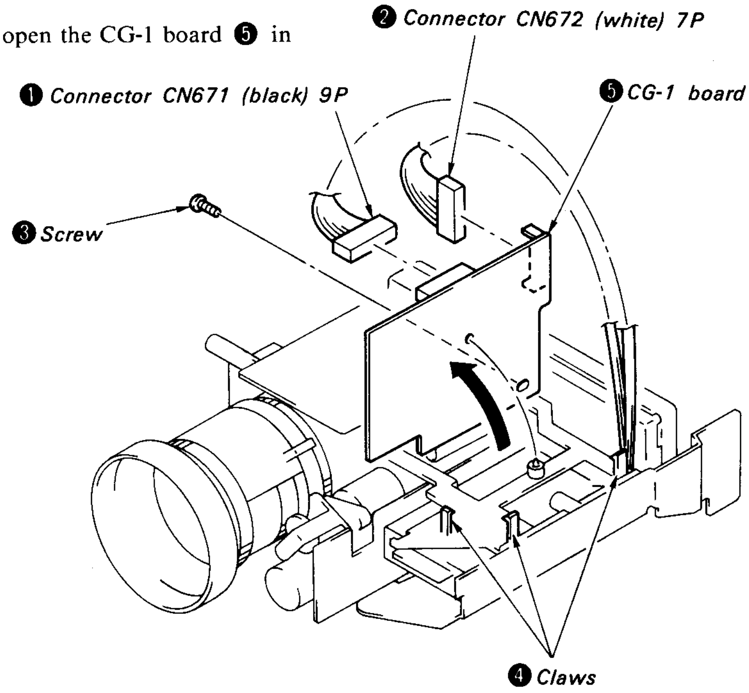
2-20. OPENING OF THE FC-10 BOARD

1) Remove connector CN782 (white) ❶.
2) Remove screw ❷.
3) Open the FC-10 board ❸ in the direction of arrow while removing the Ⓐ section.


❸ FC-10 board
❶ Connector CN782 (white, AI-1 board) 4P
❷ Screw
Ⓐ

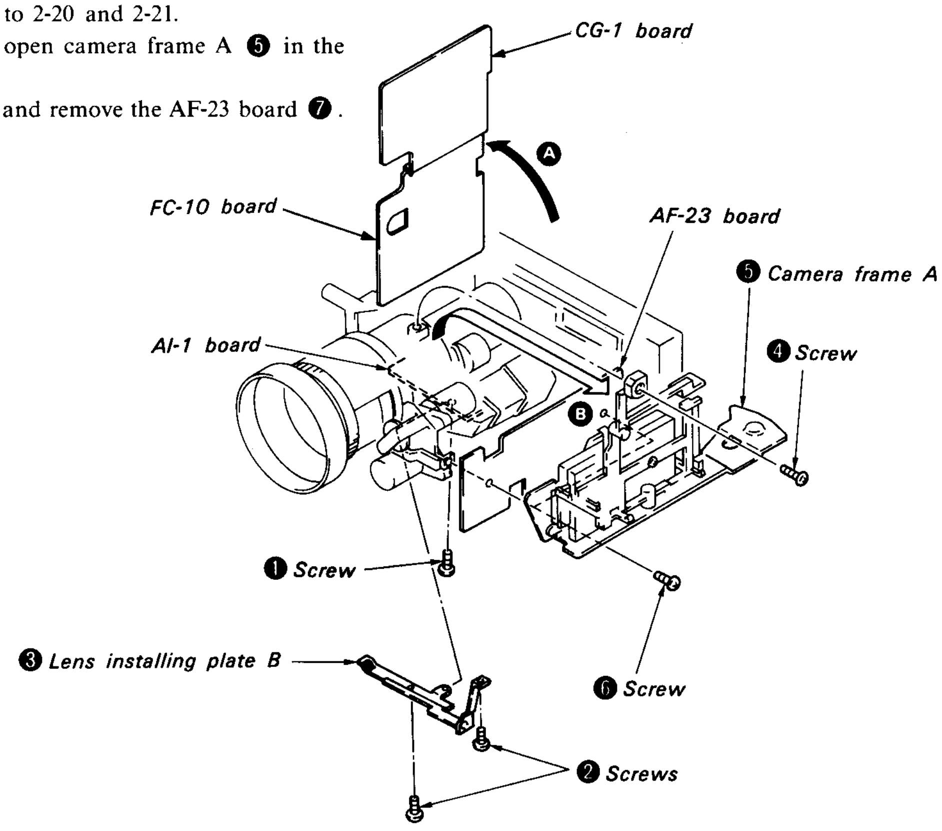
2-21. OPENING OF THE CG-1 BOARD

1) Remove connectors CN671 (black) ❶ and CN672 (white) ❷.
2) Remove screw ❸.
3) Remove three claws ❹ and open the CG-1 board ❺ in the direction of arrow.


❷ Connector CN672 (white) 7P
❶ Connector CN671 (black) 9P
❺ CG-1 board
❸ Screw
❹ Claws

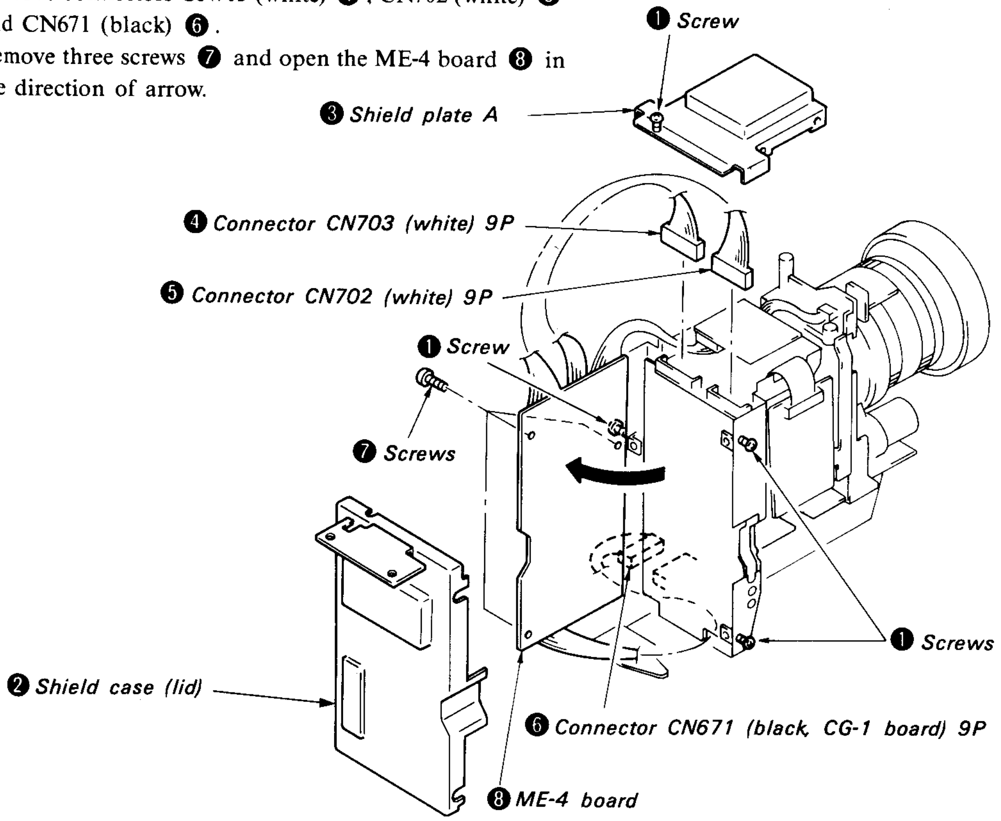
2-22. REMOVAL OF THE AF-23 BOARD

1) Remove screw ❶ fastening the AI-1 board.
2) Remove two screws ❷ and remove the lens installing plate B ❸.
3) Open the FC-10 board and CG-1 board in the direction of arrow Ⓐ by referring to 2-20 and 2-21.
4) Remove screw ❹ and open camera frame A ❺ in the direction of arrow Ⓑ.
5) Remove two screws ❻ and remove the AF-23 board ❼.


CG-1 board
Ⓐ
FC-10 board
AF-23 board
❺ Camera frame A
❹ Screw
AI-1 board
Ⓑ
a
❶ Screw
❸ Lens installing plate B
❻ Screw
❷ Screws

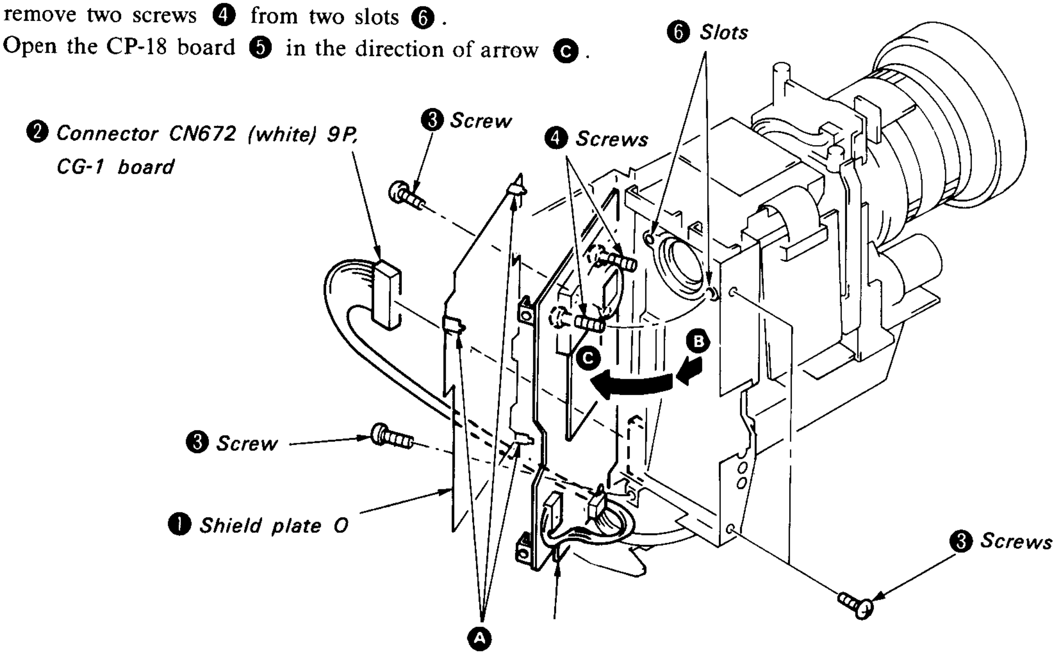
2-23. OPENING OF THE ME-4 BOARD

1) Loosen four screws ❶ and remove shield case (lid) ❷.
2) Remove shield plate A ❸.
3) Remove connectors CN703 (white) ❹, CN702 (white) ❺ and CN671 (black) ❻.
4) Remove three screws ❼ and open the ME-4 board ❽ in the direction of arrow.

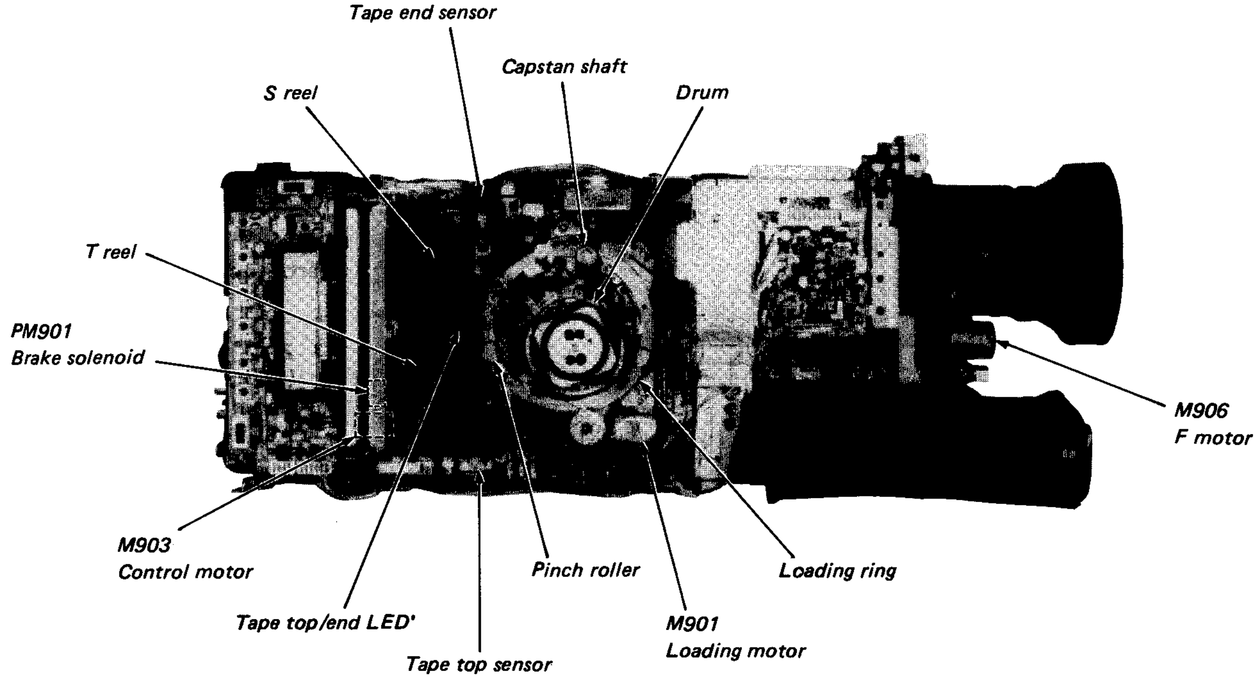

❶ Screw
❸ Shield plate A
❹ Connector CN703 (white) 9P
❺ Connector CN702 (white) 9P
❶ Screw
❼ Screws
❶ Screws
❷ Shield case (lid)
❻ Connector CN671 (black, CG-1 board) 9P
❽ ME-4 board

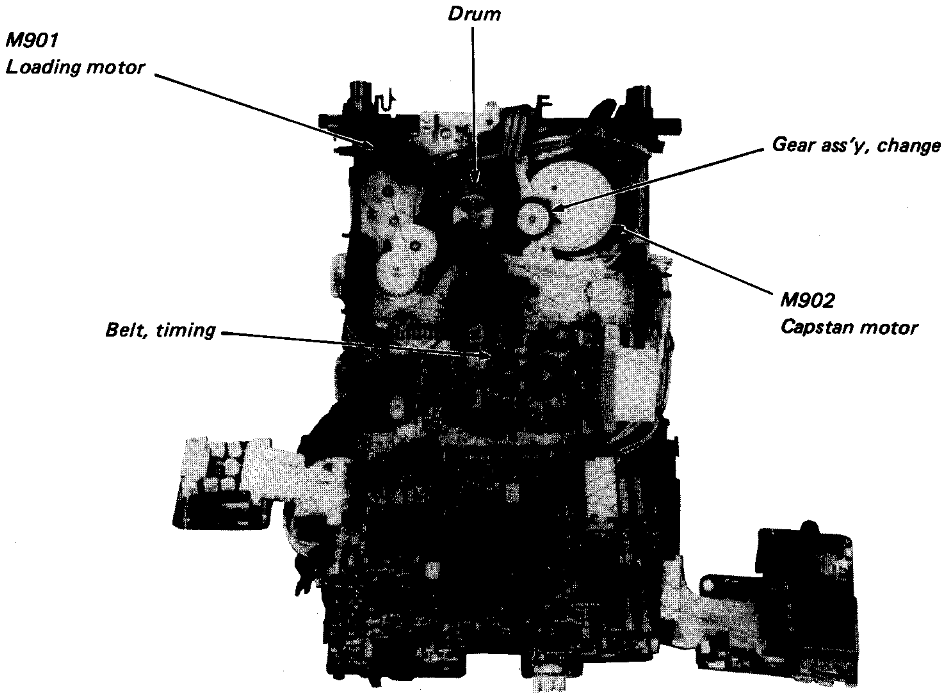
2-24. OPENING OF THE CP-18 BOARD

1) Open the ME-4 board by referring to 2-23.
2) Remove three solders in the 🅐 section and remove the shield plate O ❶.
3) Remove connector CN672 (white) ❷.
4) Remove four screws ❸ and loose two screws ❹.
5) Shift the CP-18 board ❺ in the direction of arrow 🅑 and remove two screws ❹ from two slots ❻.
6) Open the CP-18 board ❺ in the direction of arrow 🅒.


❻ Slots
❷ Connector CN672 (white) 9P, CG-1 board
❸ Screw
❹ Screws
🅑
🅒
❸ Screw
❶ Shield plate O
❸ Screws
🅐

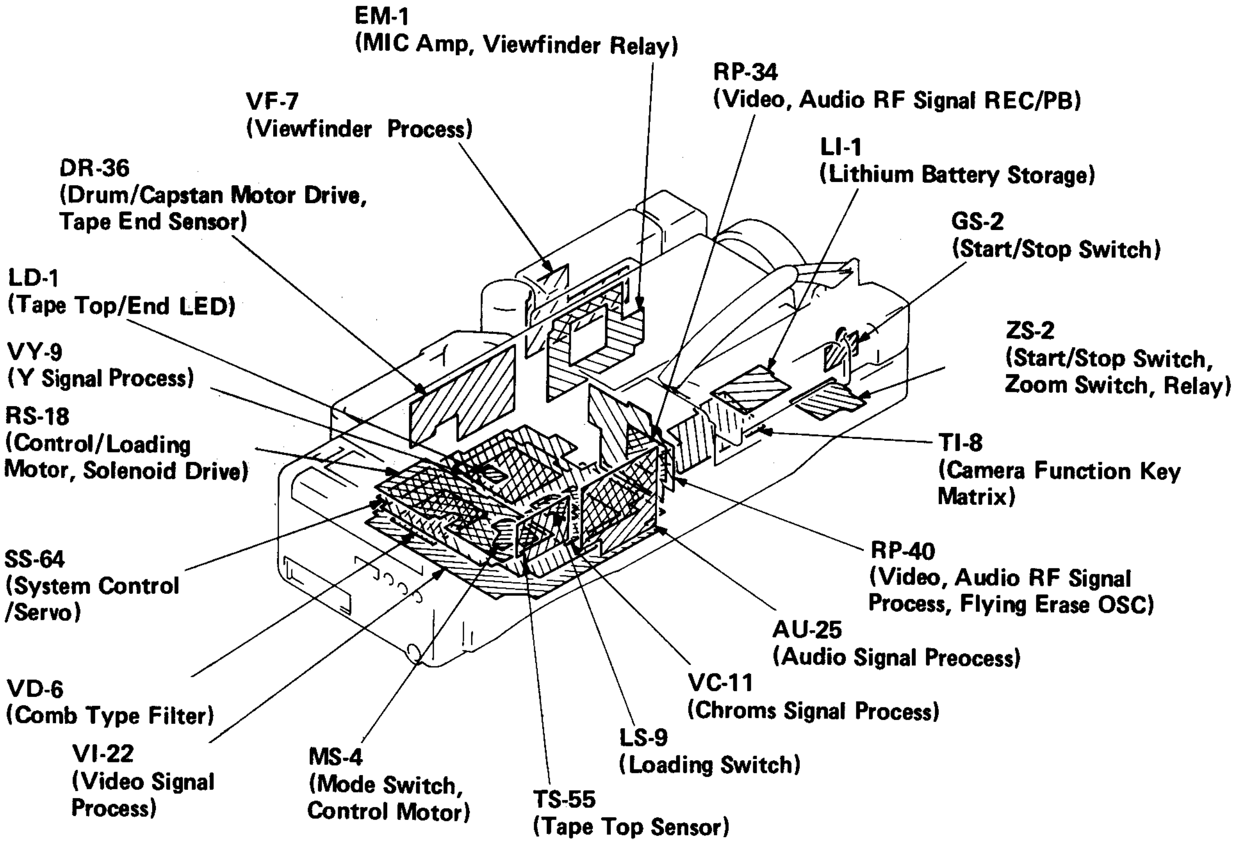
2-25. INTERNAL VIEW

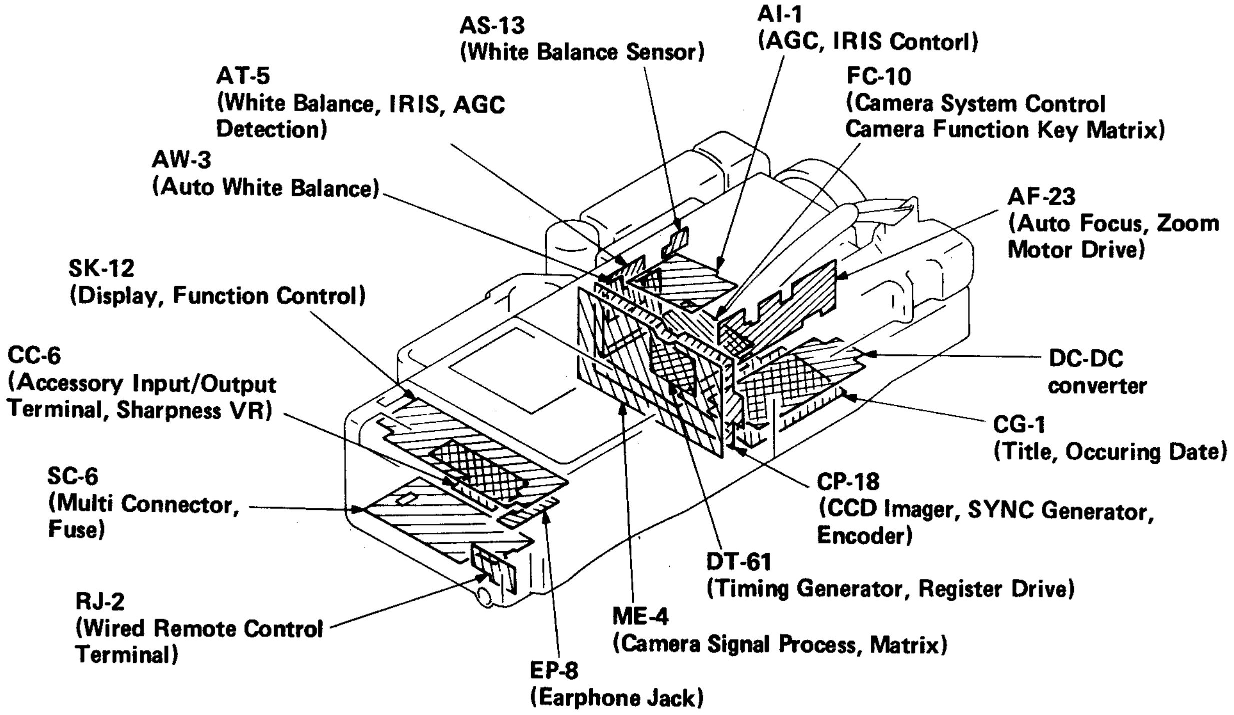

Tape end sensor
Capstan shaft
S reel
Drum
T reel
PM901
Brake solenoid
M906
F motor
M903
Control motor
Pinch roller
Loading ring
Tape top/end LED'
M901
Loading motor
Tape top sensor


Drum
M901
Loading motor
Gear ass'y, change
M902
Capstan motor
Belt, timing

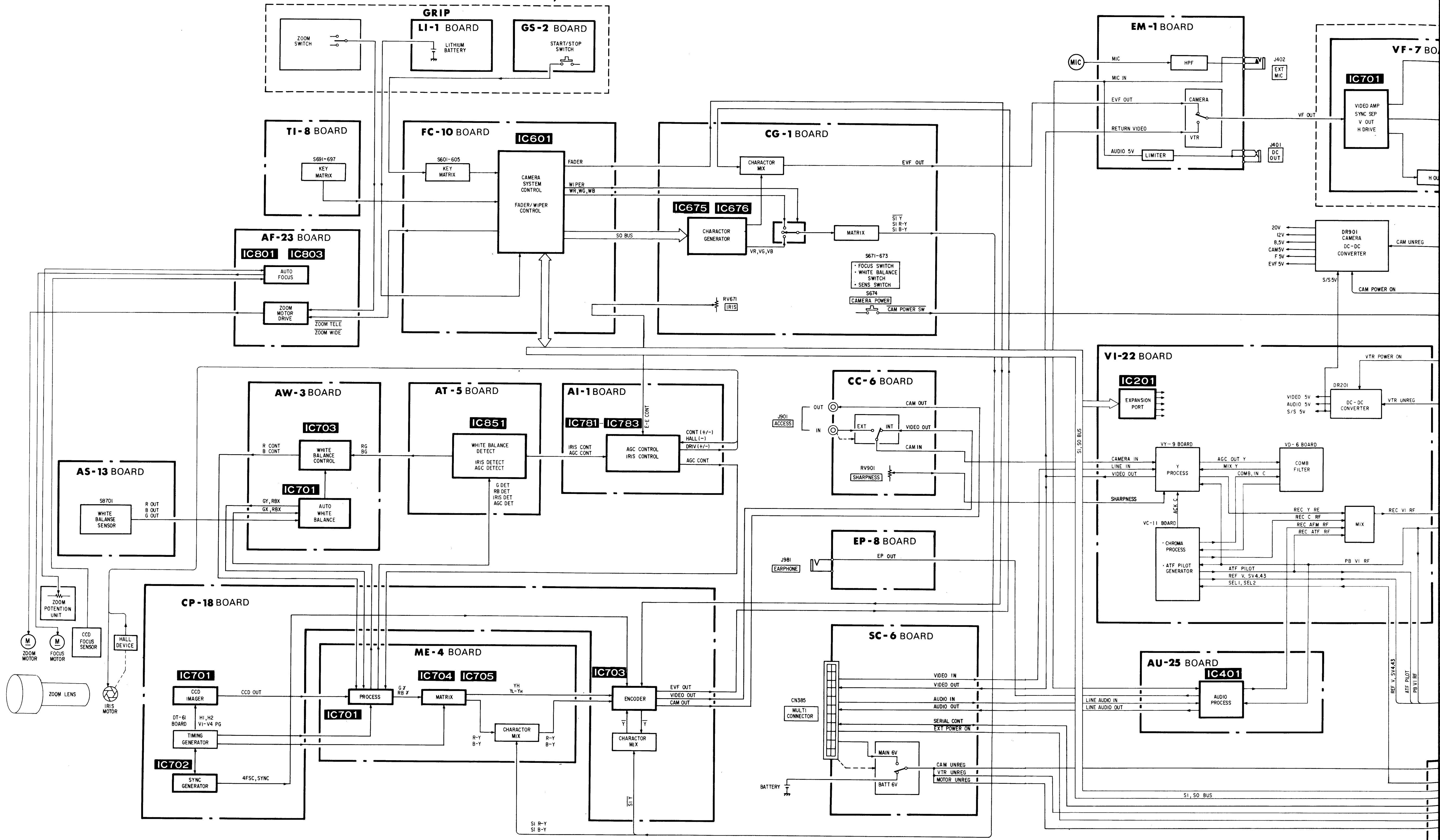
SECTION 3
DIAGRAMS

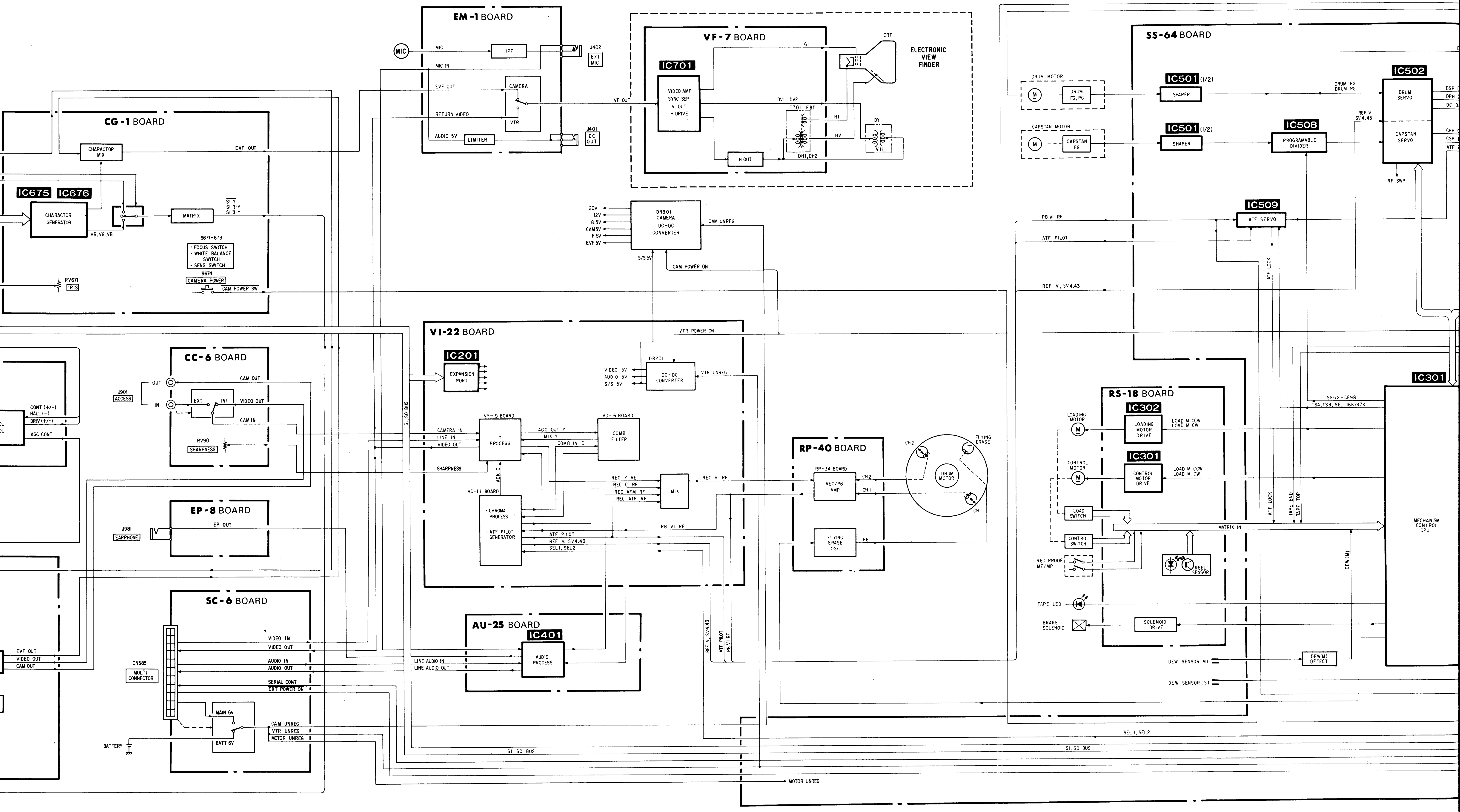
3-1. CIRCUIT BOARDS LOCATION

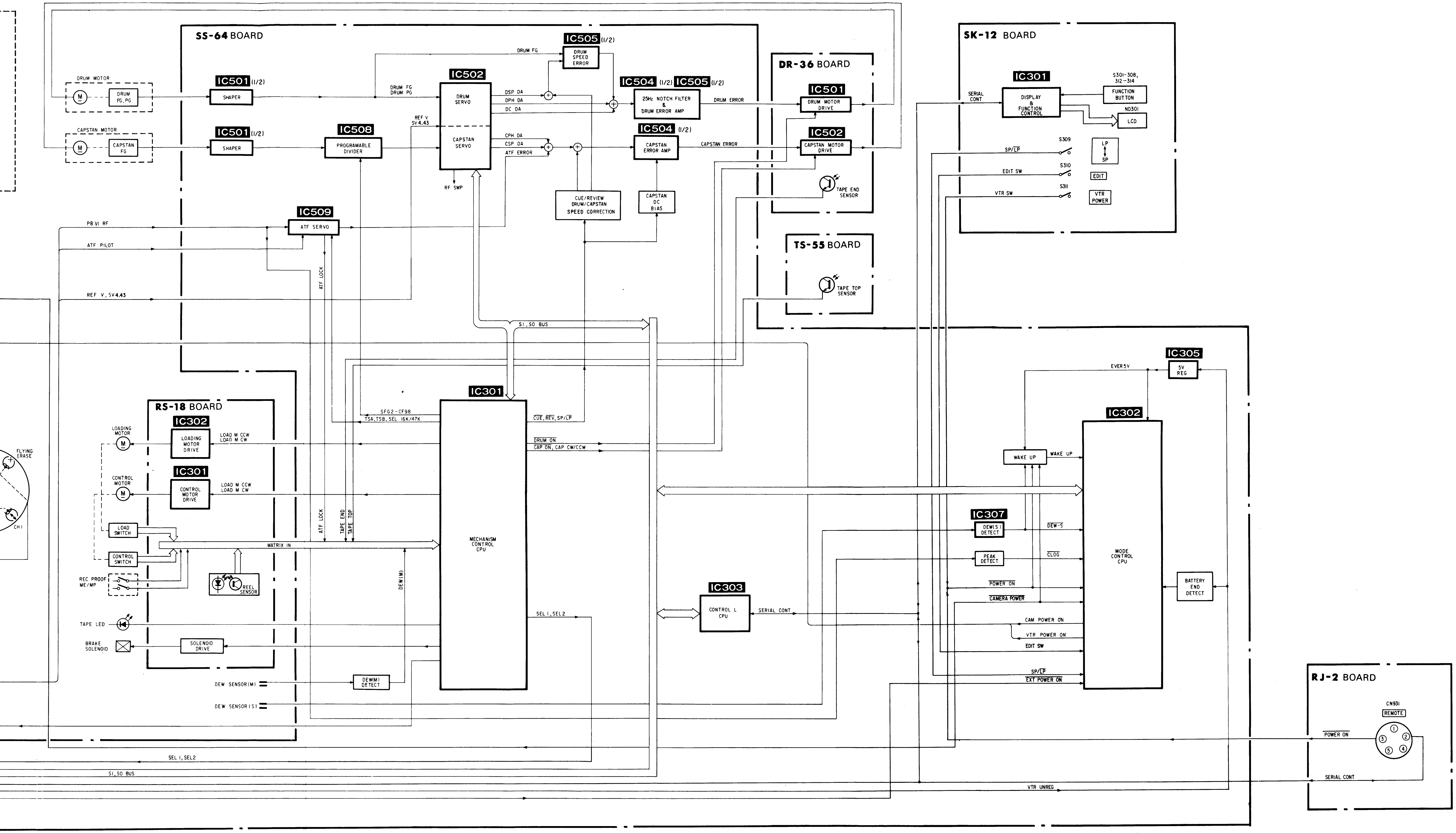

EM-1
(MIC Amp, Viewfinder Relay)
RP-34
(Video, Audio RF Signal REC/PB)
VF-7
(Viewfinder Process)
LI-1
(Lithium Battery Storage)
DR-36
(Drum/Capstan Motor Drive,
Tape End Sensor)
GS-2
(Start/Stop Switch)
LD-1
(Tape Top/End LED)
ZS-2
(Start/Stop Switch,
Zoom Switch, Relay)
VY-9
(Y Signal Process)
RS-18
(Control/Loading
Motor, Solenoid Drive)
TI-8
(Camera Function Key
Matrix)
SS-64
(System Control
/Servo)
RP-40
(Video, Audio RF Signal
Process, Flying Erase OSC)
AU-25
(Audio Signal Preocess)
VD-6
(Comb Type Filter)
VC-11
(Chroms Signal Process)
VI-22
(Video Signal
Process)
MS-4
(Mode Switch,
Control Motor)
LS-9
(Loading Switch)
TS-55
(Tape Top Sensor)


AS-13
(White Balance Sensor)
AI-1
(AGC, IRIS Contorl)
AT-5
(White Balance, IRIS, AGC
Detection)
FC-10
(Camera System Control
Camera Function Key Matrix)
AW-3
(Auto White Balance)
AF-23
(Auto Focus, Zoom
Motor Drive)
SK-12
(Display, Function Control)
CC-6
(Accessory Input/Output
Terminal, Sharpness VR)
DC-DC
converter
CG-1
(Title, Occuring Date)
SC-6
(Multi Connector,
Fuse)
CP-18
(CCD Imager, SYNC Generator,
Encoder)
DT-61
(Timing Generator, Register Drive)
RJ-2
(Wired Remote Control
Terminal)
ME-4
(Camera Signal Process, Matrix)
EP-8
(Earphone Jack)

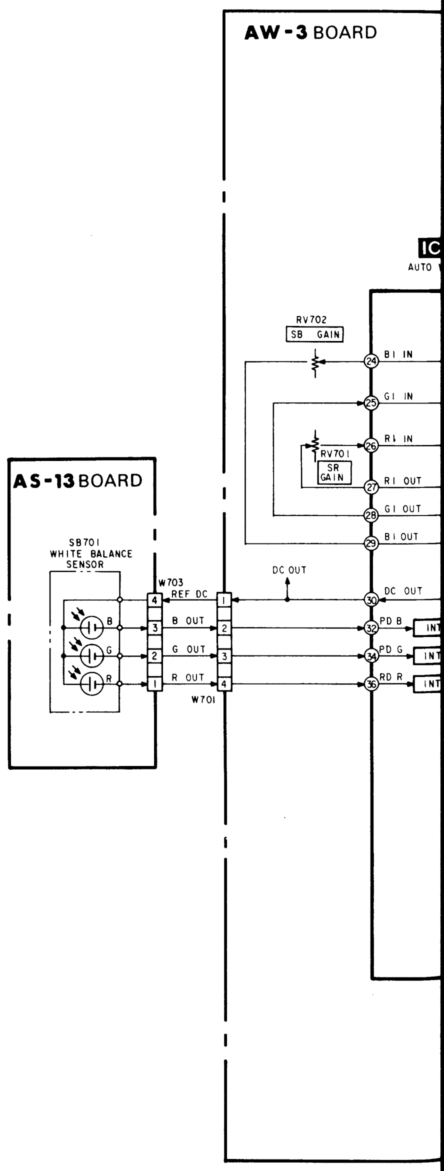
3-2. OVERALL BLOCK DIAGRAM


GRIP
ZOOM SWITCH
LI-1 BOARD
LITHIUM BATTERY
GS-2 BOARD
START/STOP SWITCH
TI-8 BOARD
S691-697
KEY MATRIX
FC-10 BOARD
IC601
S601-605
KEY MATRIX
CAMERA SYSTEM CONTROL
FADER/WIPER CONTROL
FADER
WIPER
WR,WG,WB
SO BUS
CG-1 BOARD
CHARACTOR MIX
EVF OUT
IC675
IC676
CHARACTOR GENERATOR
VR,VG,VB
MATRIX
SI Y
SI R-Y
SI B-Y
S671-673
· FOCUS SWITCH
· WHITE BALANCE SWITCH
· SENS SWITCH
S674
CAMERA POWER
CAM POWER SW
RV671
IRIS
AF-23 BOARD
IC801
IC803
AUTO FOCUS
ZOOM MOTOR DRIVE
ZOOM TELE
ZOOM WIDE
EM-1 BOARD
MIC
MIC
MIC IN
HPF
J402
EXT MIC
EVF OUT
CAMERA
VTR
RETURN VIDEO
AUDIO 5V
LIMITER
J401
DC OUT
VF-7 BO
IC701
VIDEO AMP
SYNC SEP
V OUT
H DRIVE
VF OUT
H OU
20V
12V
8.5V
CAM5V
F 5V
EVF 5V
DR901
CAMERA
DC-DC CONVERTER
CAM UNREG
S/S 5V
CAM POWER ON
AW-3 BOARD
IC703
R CONT
B CONT
WHITE BALANCE CONTROL
RG
BG
IC701
GY, RBX
GX, RBX
AUTO WHITE BALANCE
AT-5 BOARD
IC851
WHITE BALANCE DETECT
IRIS DETECT
AGC DETECT
G DET
RB DET
IRIS DET
AGC DET
AI-1 BOARD
IC781
IC783
E-E CONT
IRIS CONT
AGC CONT
AGC CONTROL
IRIS CONTROL
CONT (+/-)
HALL (-)
DRIV (+/-)
AGC CONT
AS-13 BOARD
S8701
WHITE BALANSE SENSOR
R OUT
B OUT
G OUT
CC-6 BOARD
OUT
IN
J901
ACCESS
EXT
INT
CAM OUT
VIDEO OUT
CAM IN
RV901
SHARPNESS
EP-8 BOARD
EP OUT
J981
EARPHONE
VI-22 BOARD
IC201
EXPANSION PORT
VTR POWER ON
DR201
VIDEO 5V
AUDIO 5V
S/S 5V
DC-DC CONVERTER
VTR UNREG
SI, SO BUS
VY-9 BOARD
CAMERA IN
LINE IN
VIDEO OUT
Y PROCESS
AGC OUT Y
MIX Y
COMB, IN C
VD-6 BOARD
COMB FILTER
SHARPNESS
ACK C
VC-11 BOARD
· CHROMA PROCESS
· ATF PILOT GENERATOR
REC Y RE
REC C RF
REC AFM RF
REC ATF RF
MIX
REC VI RF
PB VI RF
ATF PILOT
REF V. SV4.43
SEL1, SEL2
REF V. SV4.43
ATF PILOT
PB VI RF
ZOOM POTENTION UNIT
ZOOM MOTOR
FOCUS MOTOR
CCD FOCUS SENSOR
HALL DEVICE
ZOOM LENS
IRIS MOTOR
CP-18 BOARD
ME-4 BOARD
IC701
CCD IMAGER
CCD OUT
DT-61 BOARD
H1, H2
V1-V4 PG
TIMING GENERATOR
IC702
SYNC GENERATOR
4FSC, SYNC
PROCESS
IC701
G γ
RB γ
IC704
IC705
MATRIX
YH
YL-YH
R-Y
B-Y
CHARACTOR MIX
R-Y
B-Y
IC703
ENCODER
EVF OUT
VIDEO OUT
CAM OUT
Y
Y
CHARACTOR MIX
SI Y
SI R-Y
SI B-Y
SC-6 BOARD
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT
SERIAL CONT
EXT POWER ON
CN385
MULTI CONNECTOR
MAIN 6V
BATT 6V
BATTERY
CAM UNREG
VTR UNREG
MOTOR UNREG
SI, SO BUS
AU-25 BOARD
IC401
LINE AUDIO IN
LINE AUDIO OUT
AUDIO PROCESS

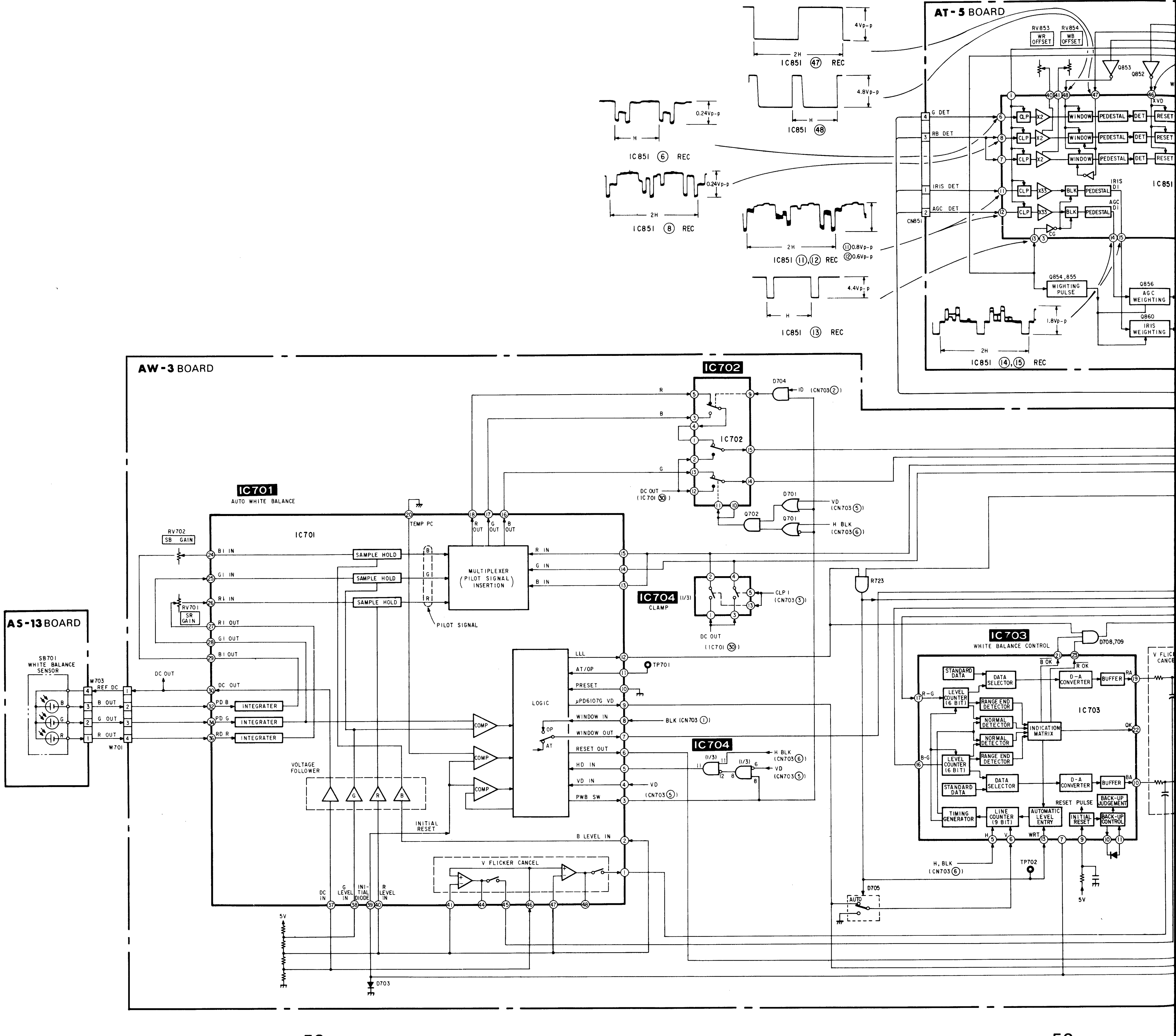

EM-1 BOARD
MIC
HPF
LIMITER
CAMERA
VTR
MIC IN
EVF OUT
RETURN VIDEO
AUDIO 5V
J402 EXT MIC
J401 DC OUT
VF-7 BOARD
IC701
VIDEO AMP SYNC SEP V OUT H DRIVE
H OUT
VF OUT
G1
DV1 DV2
T701 FBT
DH1,DH2
HI
HV
CRT
DY
VH
ELECTRONIC VIEW FINDER
CG-1 BOARD
CHARACTOR MIX
IC675
IC676
CHARACTOR GENERATOR
VR,VG,VB
MATRIX
EVF OUT
S1 Y
S1 R-Y
S1 B-Y
S671-673
· FOCUS SWITCH
· WHITE BALANCE SWITCH
· SENS SWITCH
S674
CAMERA POWER
CAM POWER SW
RV671
IRIS
DR901 CAMERA DC-DC CONVERTER
20V
12V
8.5V
CAM5V
F 5V
EVF 5V
S/S 5V
CAM UNREG
CAM POWER ON
VTR POWER ON
CC-6 BOARD
J901
ACCESS
OUT
IN
EXT
INT
CAM OUT
VIDEO OUT
CAM IN
RV901
SHARPNESS
CONT (+/-)
HALL (-)
DRIV (+/-)
AGC CONT
EP-8 BOARD
J981
EARPHONE
EP OUT
SC-6 BOARD
CN385
MULTI CONNECTOR
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT
SERIAL CONT
EXT POWER ON
MAIN 6V
BATT 6V
BATTERY
CAM UNREG
VTR UNREG
MOTOR UNREG
EVF OUT
VIDEO OUT
CAM OUT
S1, S0 BUS
VI-22 BOARD
IC201
EXPANSION PORT
DR201
DC-DC CONVERTER
VIDEO 5V
AUDIO 5V
S/S 5V
VTR UNREG
VY-9 BOARD
Y PROCESS
CAMERA IN
LINE IN
VIDEO OUT
SHARPNESS
AGC OUT Y
MIX Y
COMB, IN C
VD-6 BOARD
COMB FILTER
ACK C
VC-11 BOARD
· CHROMA PROCESS
· ATF PILOT GENERATOR
REC Y RE
REC C RF
REC AFM RF
REC ATF RF
MIX
REC VI RF
PB VI RF
ATF PILOT
REF V, SV4.43
SEL1, SEL2
AU-25 BOARD
IC401
AUDIO PROCESS
LINE AUDIO IN
LINE AUDIO OUT
REF V, SV4.43
ATF PILOT
PB VI RF
RP-40 BOARD
RP-34 BOARD
REC/PB AMP
CH2
CH1
FLYING ERASE OSC
FE
DRUM MOTOR
FLYING ERASE
SS-64 BOARD
DRUM MOTOR
DRUM FG, PG
CAPSTAN MOTOR
CAPSTAN FG
IC501 (1/2)
SHAPER
IC508
PROGRAMABLE DIVIDER
IC502
DRUM SERVO
CAPSTAN SERVO
DRUM FG
DRUM PG
REF V SV4.43
RF SWP
DSP
DPH
DC
CPH
CSP
ATF
IC509
ATF SERVO
PB VI RF
ATF PILOT
REF V, SV4.43
ATF LOCK
RS-18 BOARD
IC302
LOADING MOTOR DRIVE
LOADING MOTOR
LOAD M CCW
LOAD M CW
IC301
CONTROL MOTOR DRIVE
CONTROL MOTOR
LOAD SWITCH
CONTROL SWITCH
REC PROOF ME/MP
REEL SENSOR
MATRIX IN
TAPE LED
BRAKE SOLENOID
SOLENOID DRIVE
DEW SENSOR (M)
DEW SENSOR (S)
DEW (M) DETECT
DEW (M)
ATF LOCK
TAPE END
TAPE TOP
SFG2-CF98
TSA, TSB, SEL 16K/47K
IC301
MECHANISM CONTROL CPU
SEL 1, SEL2
S1, S0 BUS
MOTOR UNREG

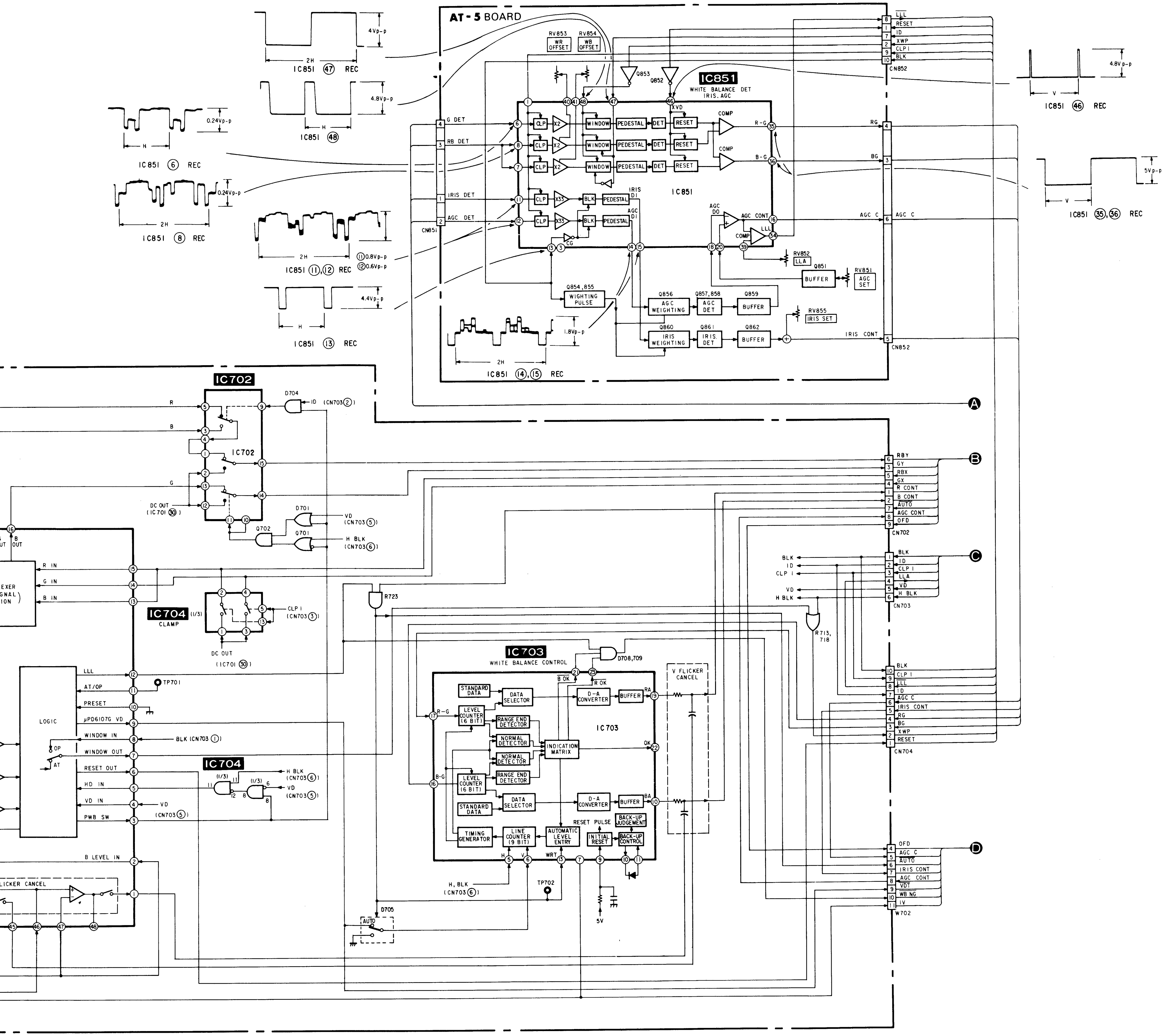

SS-64 BOARD
DRUM MOTOR
M
DRUM FG, PG
CAPSTAN MOTOR
M
CAPSTAN FG
IC501 (1/2)
SHAPER
IC501 (1/2)
SHAPER
IC508
PROGRAMABLE DIVIDER
DRUM FG
DRUM FG
DRUM PG
REF V
SV 4.43
IC502
DRUM SERVO
CAPSTAN SERVO
RF SWP
IC505 (1/2)
DRUM SPEED ERROR
DSP DA
DPH DA
DC DA
CPH DA
CSP DA
ATF ERROR
IC504 (1/2) IC505 (1/2)
25Hz NOTCH FILTER & DRUM ERROR AMP
DRUM ERROR
IC504 (1/2)
CAPSTAN ERROR AMP
CAPSTAN ERROR
CUE/REVIEW DRUM/CAPSTAN SPEED CORRECTION
CAPSTAN DC BIAS
IC509
ATF SERVO
PB VI RF
ATF PILOT
REF V, SV 4.43
ATF LOCK
SI, SO BUS
DR-36 BOARD
IC501
DRUM MOTOR DRIVE
IC502
CAPSTAN MOTOR DRIVE
TAPE END SENSOR
TS-55 BOARD
TAPE TOP SENSOR
SK-12 BOARD
IC301
DISPLAY & FUNCTION CONTROL
SERIAL CONT
S301-308, 312-314
FUNCTION BUTTON
ND301
LCD
S309
SP/LP
LP ↕ SP
S310
EDIT SW
EDIT
S311
VTR SW
VTR POWER
RS-18 BOARD
LOADING MOTOR
M
IC302
LOADING MOTOR DRIVE
LOAD M CCW
LOAD M CW
CONTROL MOTOR
M
IC301
CONTROL MOTOR DRIVE
LOAD M CCW
LOAD M CW
FLYING ERASE
CH1
LOAD SWITCH
CONTROL SWITCH
REC PROOF ME/MP
REEL SENSOR
TAPE LED
BRAKE SOLENOID
SOLENOID DRIVE
MATRIX IN
ATF LOCK
TAPE END
TAPE TOP
DEW(M)
IC301
MECHANISM CONTROL CPU
SFG2 - CF98
TSA, TSB, SEL 16K/47K
CUE, REV, SP/LP
DRUM ON
CAP ON, CAP CW/CCW
SEL 1, SEL2
DEW SENSOR (M)
DEW(M) DETECT
DEW SENSOR (S)
SEL 1, SEL2
SI, SO BUS
IC303
CONTROL L CPU
SERIAL CONT
IC305
5V REG
EVER 5V
IC302
MODE CONTROL CPU
WAKE UP
WAKE UP
IC307
DEW(S) DETECT
DEW-S
PEAK DETECT
CLOG
POWER ON
CAMERA POWER
CAM POWER ON
VTR POWER ON
EDIT SW
SP/LP
EXT POWER ON
BATTERY END DETECT
VTR UNREG
RJ-2 BOARD
CN931
REMOTE
POWER ON
SERIAL CONT
①
②
③
④
⑤

3-3. CAMERA BLOCK DIAGRAM (1)-1

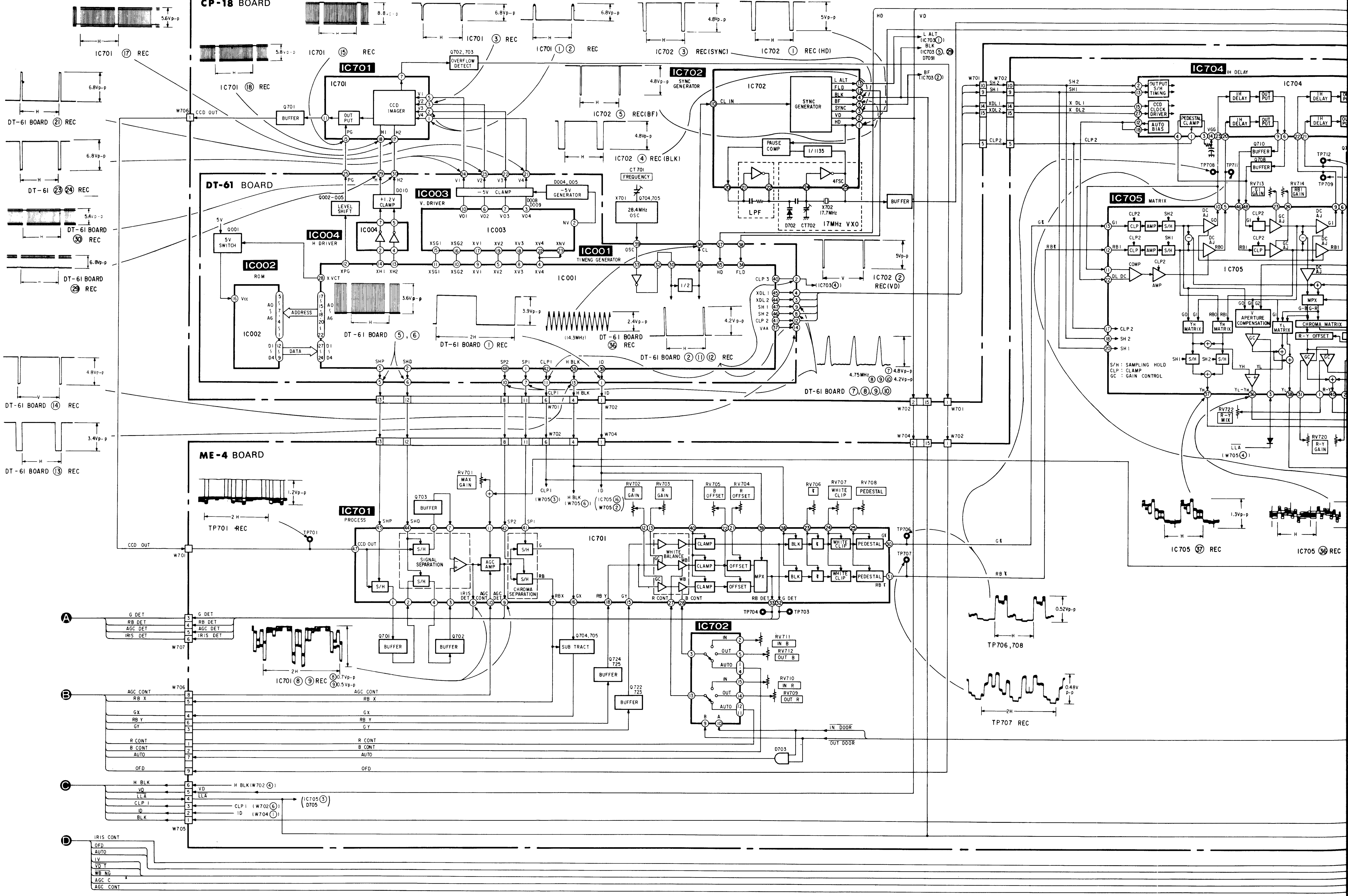

AW-3 BOARD
IC
AUTO
RV702
SB GAIN
24 B1 IN
25 G1 IN
26 R1 IN
RV701
SR GAIN
27 R1 OUT
28 G1 OUT
29 B1 OUT
DC OUT
30 DC OUT
32 PD B
34 PD G
36 RD R
INT
INT
INT
AS-13 BOARD
SB701
WHITE BALANCE
SENSOR
B
G
R
W703
REF DC
B OUT
G OUT
R OUT
W701
4
3
2
1
1
2
3
4

3-3. CAMERA BLOCK DIAGRAM (1)-1

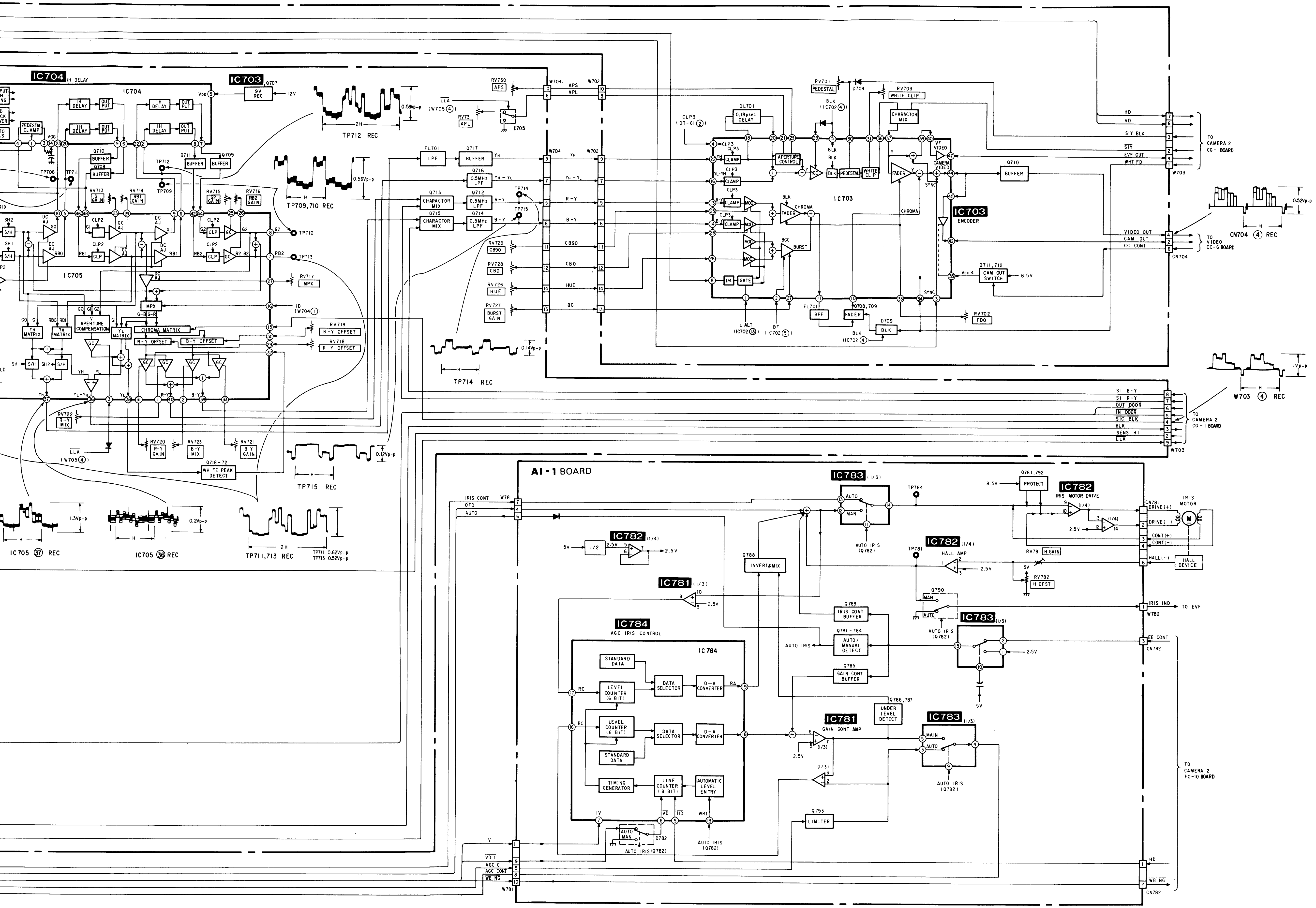

AT-5 BOARD
RV853 WR OFFSET
RV854 WB OFFSET
Q853
Q852
G DET
RB DET
IRIS DET
AGC DET
CN851
CLP
X2
X33
WINDOW
PEDESTAL
DET
RESET
BLK
IRIS DI
AGC DI
CG
IC851
Q854,855 WIGHTING PULSE
Q856 AGC WEIGHTING
Q860 IRIS WEIGHTING
4Vp-p
2H
IC851 (47) REC
4.8Vp-p
IC851 (48)
0.24Vp-p
IC851 (6) REC
IC851 (8) REC
(11)0.8Vp-p
(12)0.6Vp-p
IC851 (11),(12) REC
4.4Vp-p
IC851 (13) REC
1.8Vp-p
IC851 (14),(15) REC
AW-3 BOARD
IC701
AUTO WHITE BALANCE
RV702 SB GAIN
RV701 SR GAIN
BI IN
GI IN
RI IN
RI OUT
GI OUT
BI OUT
DC OUT
PD B
PD G
PD R
INTEGRATER
SAMPLE HOLD
TEMP PC
R OUT
G OUT
B OUT
MULTIPLEXER (PILOT SIGNAL INSERTION)
PILOT SIGNAL
R IN
G IN
B IN
LOGIC
COMP
OP
AT
LLL
AT/OP
PRESET
µPD6107G VD
WINDOW IN
WINDOW OUT
RESET OUT
HD IN
VD IN
PWB SW
B LEVEL IN
VOLTAGE FOLLOWER
INITIAL RESET
V FLICKER CANCEL
DC IN
G LEVEL IN
INITIAL DIODE
R LEVEL IN
5V
D703
TP701
BLK (CN703 (1))
VD (CN703 (5))
AS-13 BOARD
SB701 WHITE BALANCE SENSOR
W703
REF DC
B OUT
G OUT
R OUT
W701
IC702
D704
ID (CN703 (2))
DC OUT (IC701 (30))
D701
VD (CN703 (5))
Q702
Q701
H BLK (CN703 (6))
IC704 (1/3) CLAMP
CLP I (CN703 (3))
DC OUT (IC701 (30))
R723
IC704
H BLK (CN703 (6))
VD (CN703 (5))
IC703
WHITE BALANCE CONTROL
D708,709
B OK
R OK
STANDARD DATA
DATA SELECTOR
D-A CONVERTER
BUFFER
LEVEL COUNTER (6 BIT)
RANGE END DETECTOR
NORMAL DETECTOR
INDICATION MATRIX
TIMING GENERATOR
LINE COUNTER (9 BIT)
AUTOMATIC LEVEL ENTRY
INITIAL RESET
BACK-UP JUDGEMENT
BACK-UP CONTROL
RESET PULSE
R-G
B-G
RA
BA
QK
WRT
H, BLK (CN703 (6))
TP702
5V
D705
AUTO
V FLICKER CANCEL


AT-5 BOARD
IC851
WHITE BALANCE DET
IRIS, AGC
RV853 WR OFFSET
RV854 WB OFFSET
Q853
Q852
XVD
CLP
X2
WINDOW
PEDESTAL
DET
RESET
COMP
R-G
B-G
IRIS DI
AGC DI
AGC DO
AGC CONT
LLL
CG
X33
BLK
G DET
RB DET
IRIS DET
AGC DET
CN851
CN852
RESET
ID
XWP
CLP I
RG
BG
AGC C
IRIS CONT
RV852 LLA
Q851
BUFFER
RV851 AGC SET
Q854,855 WIGHTING PULSE
Q856 AGC WEIGHTING
Q857,858 AGC DET
Q859 BUFFER
Q860 IRIS WEIGHTING
Q861 IRIS DET
Q862 BUFFER
RV855 IRIS SET
4Vp-p
2H
IC851 (47) REC
4.8Vp-p
H
IC851 (48) REC
0.24Vp-p
IC851 (6) REC
0.24Vp-p
IC851 (8) REC
(11) 0.8Vp-p
(12) 0.6Vp-p
IC851 (11),(12) REC
4.4Vp-p
IC851 (13) REC
1.8Vp-p
IC851 (14),(15) REC
4.8Vp-p
V
IC851 (46) REC
5Vp-p
IC851 (35),(36) REC
IC702
R
B
G
D704
ID (CN703 (2))
DC OUT (IC701 (30))
D701
VD (CN703 (5))
Q702
Q701
H BLK (CN703 (6))
R IN
G IN
B IN
IC704 (1/3) CLAMP
CLP I (CN703 (3))
DC OUT (IC701 (30))
R723
LOGIC
LLL
AT/OP
PRESET
μPD6107G VD
WINDOW IN
WINDOW OUT
RESET OUT
HD IN
VD IN
PWB SW
B LEVEL IN
OP
AT
TP701
BLK (CN703 (1))
IC704
(1/3)
H BLK (CN703 (6))
VD (CN703 (5))
VD (CN703 (5))
LICKER CANCEL
(45) (46) (47) (48)
IC703
WHITE BALANCE CONTROL
D708,709
B OK
R OK
STANDARD DATA
DATA SELECTOR
LEVEL COUNTER (6 BIT)
RANGE END DETECTOR
NORMAL DETECTOR
INDICATION MATRIX
D-A CONVERTER
BUFFER
RA
BA
OK
TIMING GENERATOR
LINE COUNTER (9 BIT)
AUTOMATIC LEVEL ENTRY
RESET PULSE
INITIAL RESET
BACK-UP JUDGEMENT
BACK-UP CONTROL
WRT
V FLICKER CANCEL
H, BLK (CN703 (6))
TP702
5V
D705
AUTO
RBY
GY
RBX
GX
R CONT
B CONT
AUTO
AGC CONT
OFD
CN702
BLK
ID
CLP I
LLA
VD
H BLK
CN703
R713, 718
CN704
OFD
AGC C
AUTO
IRIS CONT
AGC CONT
VDT
WB NG
IV
W702
A
B
C
D

3-4. CAMERA BLOCK DIAGRAM (1)-2

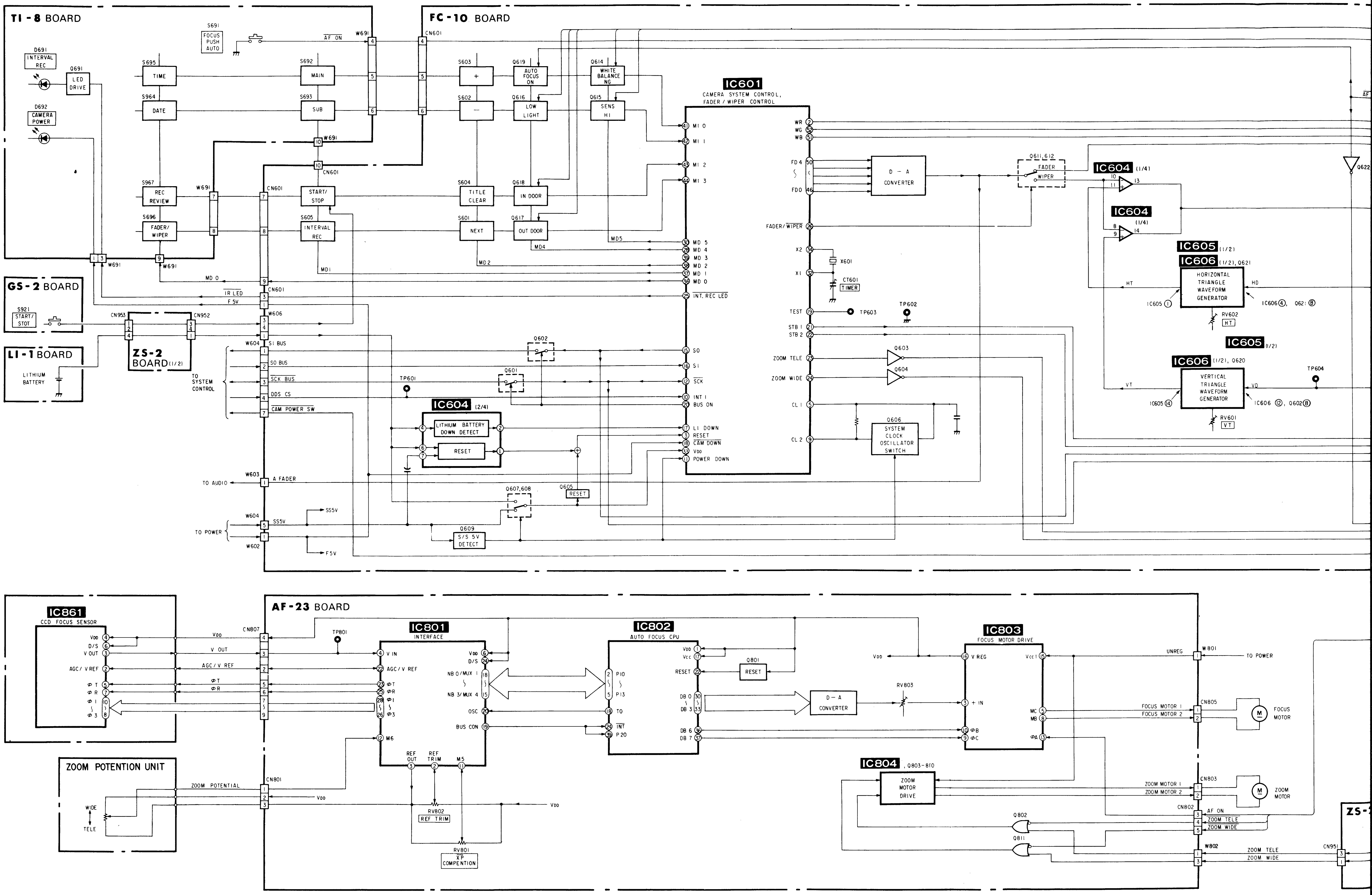


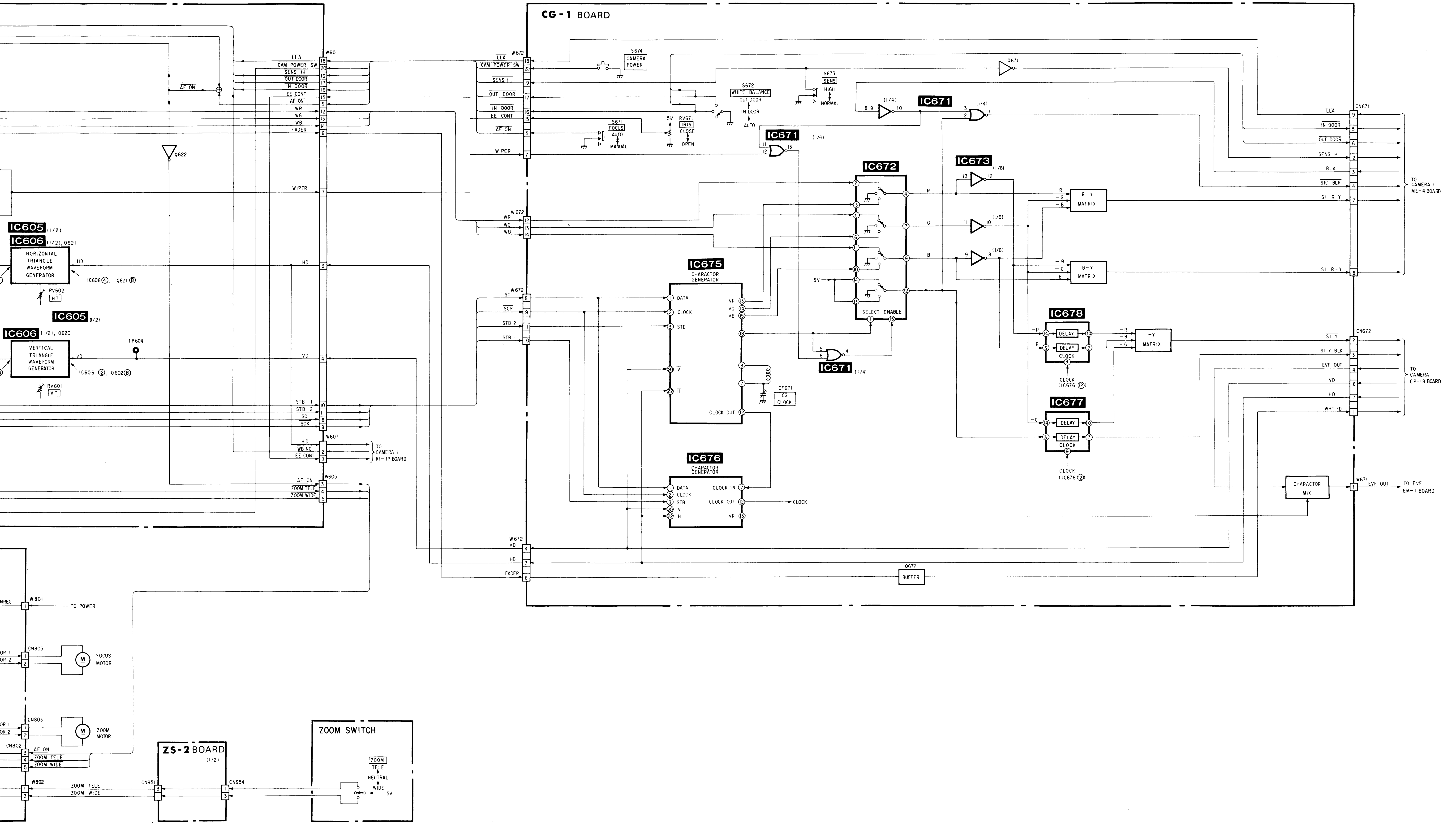
CP-18 BOARD
DT-61 BOARD
ME-4 BOARD
IC701
CCD IMAGER
OUT PUT
BUFFER
Q701
Q702, 703 OVERFLOW DETECT
IC702 SYNC GENERATOR
L ALT
FLD
BLK
BF
SYNC
VD
HD
CL IN
PAUSE COMP
1/1135
LPF
4FSC
17MHz VXO
X702 17.7MHz
D702
CT702
CT701 FREQUENCY
X701
Q704, 705
28.4MHz OSC
IC003 V. DRIVER
-5V CLAMP
D004, 005 -5V GENERATOR
D008 D009
IC004 H DRIVER
+1.2V CLAMP
D010
LEVEL SHIFT
Q002-005
5V SWITCH
Q001
IC002 ROM
ADDRESS
DATA
IC001 TIMENG GENERATOR
1/2
IC704 1H DELAY
OUTPUT S/H TIMING
CCD CLOCK DRIVER
AUTO BIAS
PEDESTAL CLAMP
1H DELAY
OUT PUT
Q710 BUFFER
Q708 BUFFER
TP708
TP711
TP712
TP709
RV713 G GAIN
RV714 RBI GAIN
IC705 MATRIX
CLP
AMP
S/H
DC AJ
COMP
GC AJ
MPX
YH MATRIX
YL MATRIX
APERTURE COMPENSATION
CHROMA MATRIX
R-Y OFFSET
RV722 R-Y MIX
RV720 R-Y GAIN
S/H : SAMPLING HOLD
CLP : CLAMP
GC : GAIN CONTROL
IC701 PROCESS
SIGNAL SEPARATION
AGC AMP
CHROMA SEPARATION
WHITE BALANCE
CLAMP
OFFSET
BLK
WHITE CLIP
PEDESTAL
RV701 MAX GAIN
Q703 BUFFER
RV702 B GAIN
RV703 R GAIN
RV705 B OFFSET
RV704 R OFFSET
RV706
RV707 WHITE CLIP
RV708 PEDESTAL
TP701
TP703
TP704
TP705
TP706
TP707
Q701 BUFFER
Q702 BUFFER
Q704, 705 SUB TRACT
Q724 725 BUFFER
Q722 723 BUFFER
IC702
IN
OUT
AUTO
RV711 IN B
RV712 OUT B
RV710 IN R
RV709 OUT R
IN DOOR
OUT DOOR
D703
W701
W702
W704
W705
W706
W707
A
G DET
RB DET
AGC DET
IRIS DET
B
AGC CONT
RB X
GX
RB Y
GY
R CONT
B CONT
AUTO
OFD
C
H BLK
VD
LLA
CLP 1
ID
BLK
H BLK (W702 ④)
CLP 1 (W702 ⑥)
ID (W704 ①)
(IC705 ③ D705)
D
IRIS CONT
OFD
AUTO
IV
VD T
WB NG
AGC C
AGC CONT
IC701 ⑰ REC
IC701 ⑮ REC
IC701 ⑱ REC
IC701 ③ REC
IC701 ①② REC
IC702 ③ REC (SYNC)
IC702 ① REC (HD)
IC702 ⑤ REC (BF)
IC702 ④ REC (BLK)
IC702 ② REC (VD)
DT-61 BOARD ㉑ REC
DT-61 ㉓ ㉔ REC
DT-61 BOARD ㉚ REC
DT-61 BOARD ㉙ REC
DT-61 BOARD ⑭ REC
DT-61 BOARD ⑬ REC
DT-61 BOARD ⑤, ⑥
DT-61 BOARD ① REC
DT-61 BOARD ㊱ REC
DT-61 BOARD ② ⑪ ⑫ REC
DT-61 BOARD ⑦, ⑧, ⑨, ⑩
TP701 REC
IC701 ⑧ ⑨ REC
TP706, 708
TP707 REC
IC705 ㊲ REC
IC705 ㊱ REC
(14.3MHz)
4.75MHz



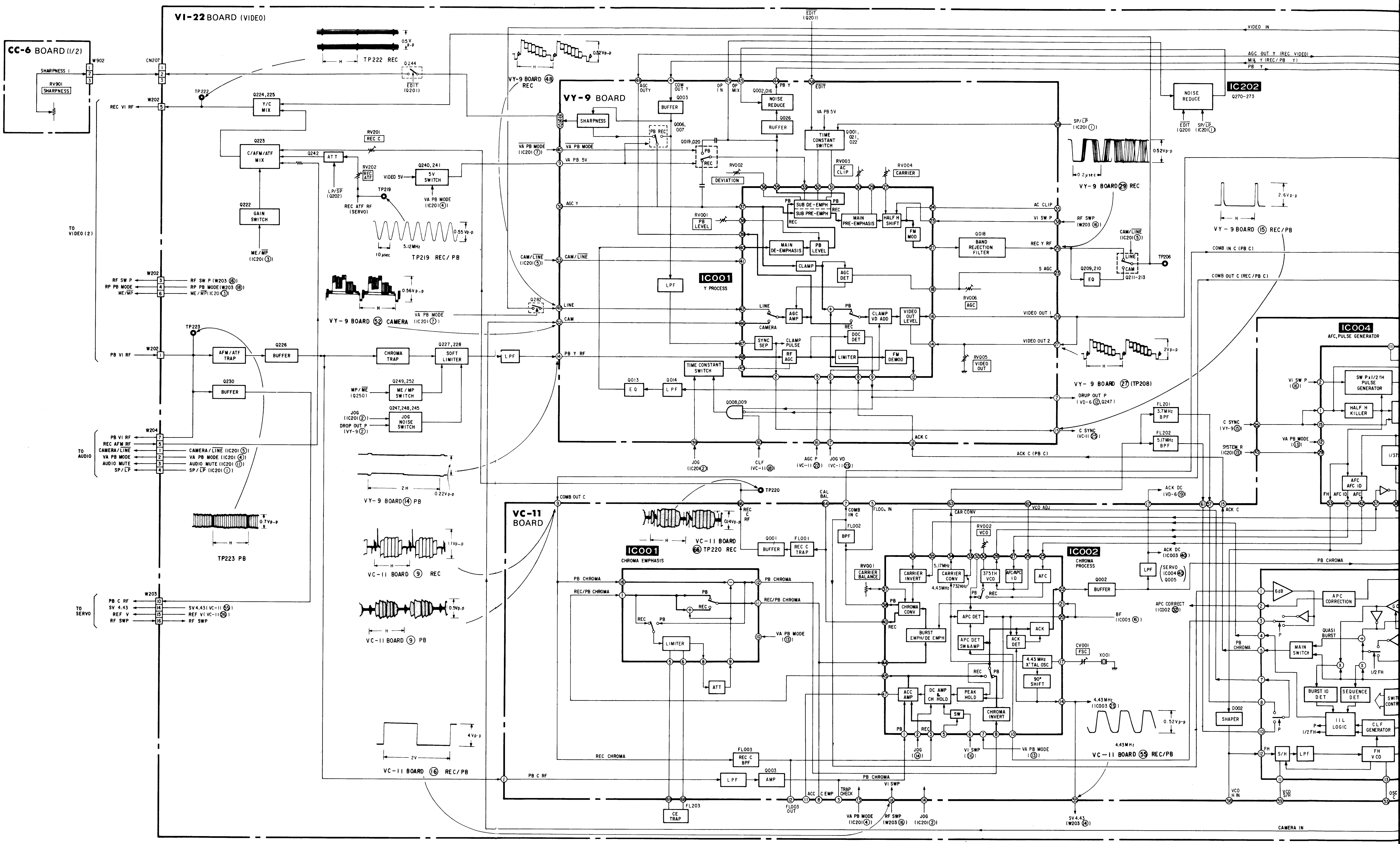
IC704 1H DELAY
IC704
1H DELAY
OUT PUT
PEDESTAL CLAMP
IC703 Q707
9V REG
VDD
12V
Q710 BUFFER
Q708 BUFFER
Q711 BUFFER
Q709 BUFFER
TP708
TP711
TP712
TP709
RV713 G GAIN
RV714 RB1 GAIN
RV715 G2 GAIN
RV716 RB2 GAIN
IC705
DC AJ
GC AJ
CLP2
CLP
G0
RB0
RB1
RB2
G1
G2
S/H
SH1
SH2
TP710
TP713
RV717 MPX
MPX
ID (W704 ①)
G-B-G-R
CHROMA MATRIX
R-Y OFFSET
B-Y OFFSET
RV719 B-Y OFFSET
RV718 R-Y OFFSET
APERTURE COMPENSATION
YH MATRIX
YL MATRIX
GC
YH
YL
YL-YH
RV722 R-Y MIX
RV720 R-Y GAIN
RV723 B-Y MIX
RV721 B-Y GAIN
LLA (W705 ④)
Q718-721 WHITE PEAK DETECT
TP712 REC
2H
0.58Vp-p
TP709,710 REC
H
0.56Vp-p
TP714 REC
0.14Vp-p
TP715 REC
0.12Vp-p
IC705 ㊲ REC
1.3Vp-p
IC705 ㊱ REC
0.2Vp-p
TP711,713 REC
TP711 0.62Vp-p
TP713 0.52Vp-p
RV730 APS
LLA (W705 ④)
RV731 APL
D705
W704
W702
APS
APL
FL701 LPF
Q717 BUFFER
Q716 0.5MHz LPF
Q713 CHARACTOR MIX
Q712 0.5MHz LPF
Q715 CHARACTOR MIX
Q714 0.5MHz LPF
TP714
TP715
YH
YH - YL
R-Y
B-Y
CB90
CB0
HUE
BG
RV729 CB90
RV728 CB0
RV726 HUE
RV727 BURST GAIN
CLP3 (DT-61 ②)
DL701 0.18μsec DELAY
RV701 PEDESTAL
D704
RV703 WHITE CLIP
BLK (IC702 ④)
CHARACTOR MIX
APERTURE CONTROL
YGC
BLK
PEDESTAL
WHITE CLIP
FADER
VF VIDEO
CAMERA VIDEO
SYNC
CHROMA
BURST
BGC
MOD
1/4
GATE
IC703
IC703 ENCODER
Q710 BUFFER
Q711,712 CAM OUT SWITCH
Vcc 4
8.5V
FL701 BPF
Q708,709 FADER
D709 BLK
BLK (IC702 ④)
RV702 FDO
L ALT (IC702 ⑬)
BF (IC702 ⑤)
HD
VD
SIY BLK
SIY
EVF OUT
WHT FD
W703
TO CAMERA 2 CG-1 BOARD
VIDEO OUT
CAM OUT
CC CONT
CN704
TO VIDEO CC-6 BOARD
CN704 ④ REC
0.52Vp-p
S1 B-Y
S1 R-Y
OUT DOOR
IN DOOR
SIC BLK
BLK
SENS HI
LLA
TO CAMERA 2 CG-1 BOARD
W703 ④ REC
1Vp-p
AI-1 BOARD
IRIS CONT
OFD
AUTO
W781
IC783 (1/3)
AUTO
MAN
AUTO IRIS (Q782)
TP784
8.5V
Q781,792 PROTECT
IC782 IRIS MOTOR DRIVE
(1/4)
2.5V
CN781
DRIVE(+)
DRIVE(-)
CONT(+)
CONT(-)
HALL(-)
IRIS MOTOR
M
HALL DEVICE
IC782 (1/4)
5V
1/2
2.5V
IC782 (1/4) HALL AMP
TP781
RV781 H GAIN
RV782 H OFST
Q788 INVERT&MIX
IC781 (1/3)
Q790
MAN
AUTO
AUTO IRIS (Q782)
Q789 IRIS CONT BUFFER
IRIS IND
W782
TO EVF
IC783 (1/3)
Q781-784 AUTO/MANUAL DETECT
AUTO IRIS
EE CONT
CN782
Q785 GAIN CONT BUFFER
5V
IC784 AGC IRIS CONTROL
IC784
STANDARD DATA
LEVEL COUNTER (6 BIT)
DATA SELECTOR
D-A CONVERTER
RA
RC
BC
TIMING GENERATOR
LINE COUNTER (9 BIT)
AUTOMATIC LEVEL ENTRY
IV
VD
HD
WRT
AUTO MAN
Q782
AUTO IRIS (Q782)
AUTO IRIS (Q782)
IC781 GAIN CONT AMP (1/3)
Q786,787 UNDER LEVEL DETECT
IC783 (1/3)
MAIN
AUTO
AUTO IRIS (Q782)
Q793 LIMITER
TO CAMERA 2 FC-10 BOARD
IV
VD T
AGC C
AGC CONT
WB NG
W781
HD
WB NG
CN782

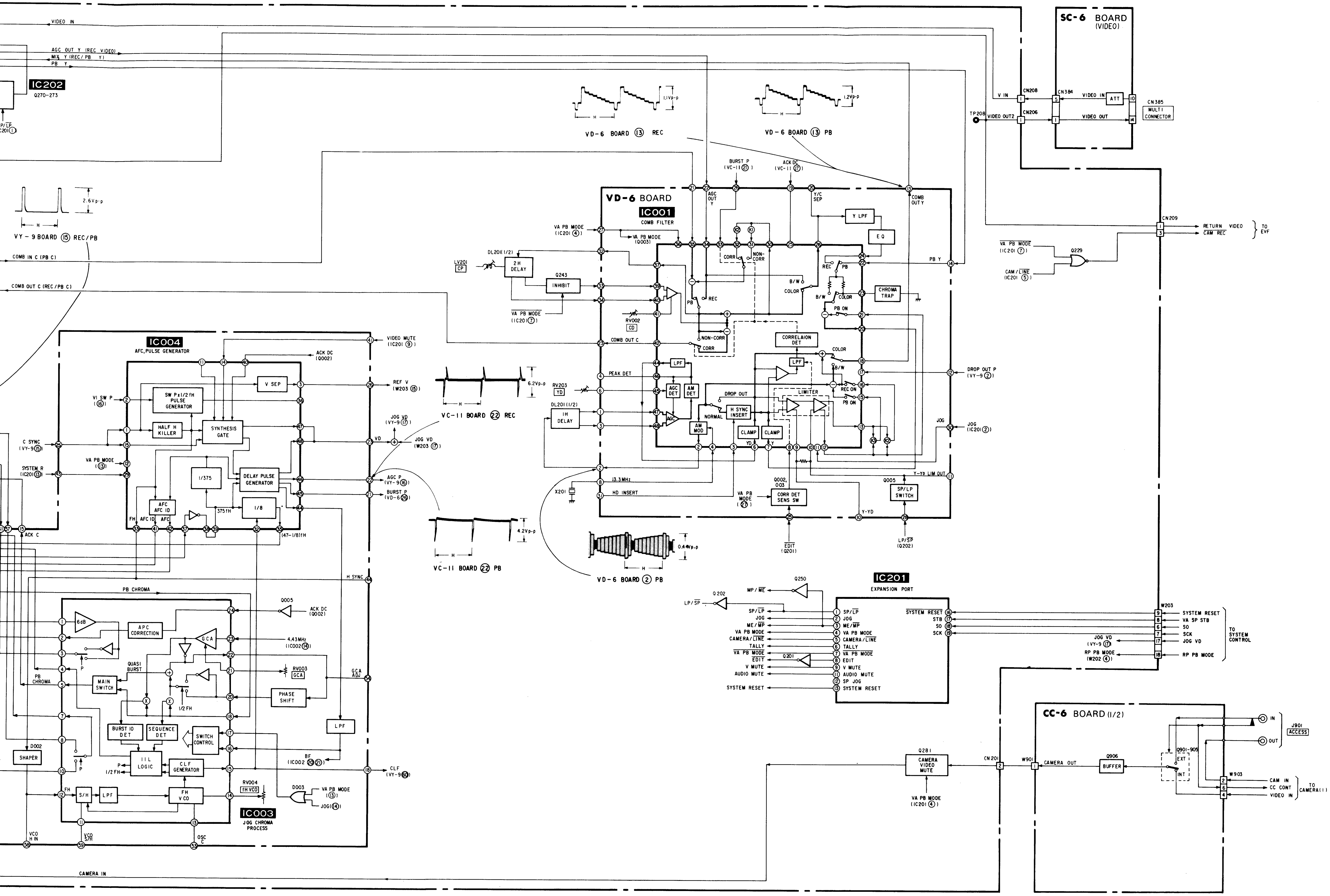
3-5. CAMERA BLOCK DIAGRAM (2)


TI-8 BOARD
D691 INTERVAL REC
Q691 LED DRIVE
D692 CAMERA POWER
S691 FOCUS PUSH AUTO
AF ON
W691
S695 TIME
S964 DATE
S692 MAIN
S693 SUB
S967 REC REVIEW
S696 FADER/WIPER
START/STOP
S605 INTERVAL REC
GS-2 BOARD
S921 START/STOT
CN953
CN952
ZS-2 BOARD (1/2)
LI-1 BOARD
LITHIUM BATTERY
FC-10 BOARD
CN601
S603 +
S602 −
Q619 AUTO FOCUS ON
Q616 LOW LIGHT
Q614 WHITE BALANCE NG
Q615 SENS HI
S604 TITLE CLEAR
S601 NEXT
Q618 IN DOOR
Q617 OUT DOOR
MD0
MD1
MD2
MD4
MD5
IR LED
F 5V
W606
W604
SI BUS
SO BUS
SCK BUS
DDS CS
CAM POWER SW
TO SYSTEM CONTROL
TP601
Q602
Q601
IC604 (2/4)
LITHIUM BATTERY DOWN DETECT
RESET
W603
A FADER
TO AUDIO
W602
SS5V
F5V
TO POWER
Q607, 608
Q605 RESET
Q609 S/S 5V DETECT
IC601 CAMERA SYSTEM CONTROL, FADER/WIPER CONTROL
MI 0
MI 1
MI 2
MI 3
MD 5
MD 4
MD 3
MD 2
MD 1
MD 0
INT. REC LED
SO
SI
SCK
INT 1
BUS ON
LI DOWN
RESET
CAM DOWN
VDD
POWER DOWN
WR
WG
WB
FD4
FD0
FADER/WIPER
X2
X1
X601
CT601 TIMER
TEST
TP603
TP602
STB 1
STB 2
ZOOM TELE
ZOOM WIDE
Q603
Q604
CL 1
CL 2
Q606 SYSTEM CLOCK OSCILLATOR SWITCH
D − A CONVERTER
Q611, 612 FADER WIPER
IC604 (1/4)
IC605 (1/2)
IC606 (1/2), Q621
HORIZONTAL TRIANGLE WAVEFORM GENERATOR
HT
HD
RV602 HT
IC605 (1/2)
IC606 (1/2), Q620
VERTICAL TRIANGLE WAVEFORM GENERATOR
VT
VD
TP604
RV601 VT
Q622
AF
IC861 CCD FOCUS SENSOR
VDD
D/S
V OUT
AGC/V REF
ΦT
ΦR
Φ1
Φ3
ZOOM POTENTION UNIT
WIDE
TELE
ZOOM POTENTIAL
AF-23 BOARD
CN807
CN801
TP801
IC801 INTERFACE
V IN
AGC/V REF
M6
NB 0/MUX 1
NB 3/MUX 4
OSC
BUS CON
REF OUT
REF TRIM
M5
RV802 REF TRIM
RV801 XP COMPENTION
IC802 AUTO FOCUS CPU
P10
P13
T0
INT
P20
DB 0
DB 3
DB 6
DB 7
Q801 RESET
D − A CONVERTER
RV803
IC803 FOCUS MOTOR DRIVE
V REG
VCC 1
+ IN
ΦB
ΦC
MC
MB
ΦA
UNREG
W801
TO POWER
CN805
FOCUS MOTOR 1
FOCUS MOTOR 2
FOCUS MOTOR
IC804, Q803-810
ZOOM MOTOR DRIVE
CN803
ZOOM MOTOR 1
ZOOM MOTOR 2
ZOOM MOTOR
CN802
AF ON
ZOOM TELE
ZOOM WIDE
Q802
Q811
W802
CN951
ZS-

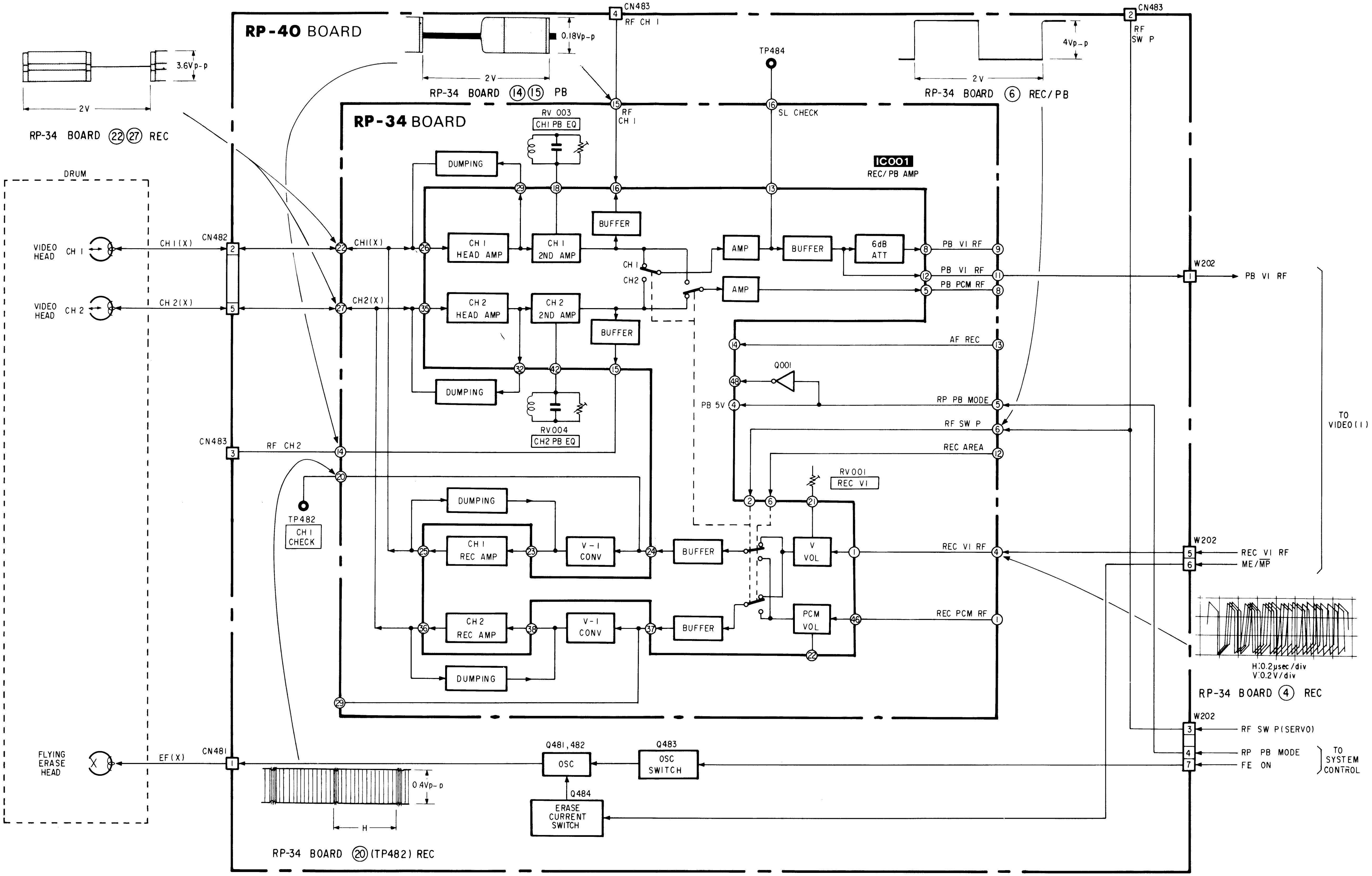

CG-1 BOARD
W601
W672
LLA
CAM POWER SW
SENS HI
OUT DOOR
IN DOOR
EE CONT
AF ON
WR
WG
WB
FADER
WIPER
S674
CAMERA POWER
S672
WHITE BALANCE
OUT DOOR
IN DOOR
AUTO
S673
SENS
HIGH
NORMAL
S671
FOCUS
AUTO
MANUAL
5V
RV671
IRIS
CLOSE
OPEN
Q671
Q622
IC671
(1/4)
IC672
SELECT ENABLE
IC673
(1/6)
IC675
CHARACTOR GENERATOR
DATA
CLOCK
STB
V
H
VR
VG
VB
CLOCK OUT
CT671
CG CLOCK
IC676
CHARACTOR GENERATOR
CLOCK IN
R-Y MATRIX
B-Y MATRIX
-Y MATRIX
IC678
IC677
DELAY
CLOCK
(IC676 ⑫)
CHARACTOR MIX
CN671
BLK
SIC BLK
SI R-Y
SI B-Y
TO CAMERA I ME-4 BOARD
CN672
SI Y
SI Y BLK
EVF OUT
VD
HD
WHT FD
TO CAMERA I CP-18 BOARD
W671
TO EVF EM-1 BOARD
Q672
BUFFER
SO
SCK
STB 1
STB 2
IC605 (1/2)
IC606 (1/2), Q621
HORIZONTAL TRIANGLE WAVEFORM GENERATOR
RV602
HT
IC606④, Q621⑧
IC606 (1/2), Q620
VERTICAL TRIANGLE WAVEFORM GENERATOR
RV601
VT
IC606 ⑫, Q602⑧
TP604
W607
WB NG
TO CAMERA I AI-IP BOARD
W605
ZOOM TELE
ZOOM WIDE
W801
TO POWER
CN805
FOCUS MOTOR
CN803
ZOOM MOTOR
CN802
W802
ZS-2 BOARD (1/2)
CN951
CN954
ZOOM SWITCH
ZOOM
TELE
NEUTRAL
WIDE

3-6. VIDEO BLOCK DIAGRAM (1)


VI-22 BOARD (VIDEO)
CC-6 BOARD (1/2)
SHARPNESS
RV901
VY-9 BOARD
IC001
Y PROCESS
VC-11 BOARD
IC001
CHROMA EMPHASIS
IC002
CHROMA PROCESS
IC004
AFC,PULSE GENERATOR
IC202
NOISE REDUCE
Q270-273
Y/C MIX
C/AFM/ATF MIX
GAIN SWITCH
ATT
5V SWITCH
AFM/ATF TRAP
BUFFER
CHROMA TRAP
SOFT LIMITER
LPF
ME/MP SWITCH
JOG NOISE SWITCH
SHARPNESS
NOISE REDUCE
TIME CONSTANT SWITCH
DEVIATION
SUB DE-EMPH
SUB PRE-EMPH
MAIN PRE-EMPHASIS
HALF H SHIFT
FM MOD
MAIN DE-EMPHASIS
PB LEVEL
CLAMP
AGC DET
AGC AMP
CLAMP VD ADD
VIDEO OUT LEVEL
SYNC SEP
RF AGC
DOC DET
LIMITER
FM DEMOD
BAND REJECTION FILTER
EQ
LIMITER
ATT
REC C BPF
AMP
CE TRAP
REC C TRAP
BPF
CARRIER BALANCE
CARRIER INVERT
CARRIER CONV
375fH VCO
AFC/APC ID
AFC
CHROMA CONV
BURST EMPH/DE EMPH
APC DET
APC DET SW&AMP
ACK
ACK DET
4.43 MHz X'TAL OSC
90° SHIFT
ACC AMP
DC AMP & CH HOLD
PEAK HOLD
SW
CHROMA INVERT
SHAPER
SW P×1/2 fH PULSE GENERATOR
HALF H KILLER
AFC ID
APC CORRECTION
MAIN SWITCH
BURST ID DET
SEQUENCE DET
IIL LOGIC
CLF GENERATOR
S/H
FH VCO
TP222 REC
TP219 REC/PB
TP223 PB
VY-9 BOARD (52) CAMERA
VY-9 BOARD (48) REC
VY-9 BOARD (29) REC
VY-9 BOARD (15) REC/PB
VY-9 BOARD (27) (TP208)
VY-9 BOARD (14) PB
VC-11 BOARD (9) REC
VC-11 BOARD (9) PB
VC-11 BOARD (16) REC/PB
VC-11 BOARD (66) TP220 REC
VC-11 BOARD (55) REC/PB
TO VIDEO (2)
TO AUDIO
TO SERVO
CAMERA IN
VIDEO IN

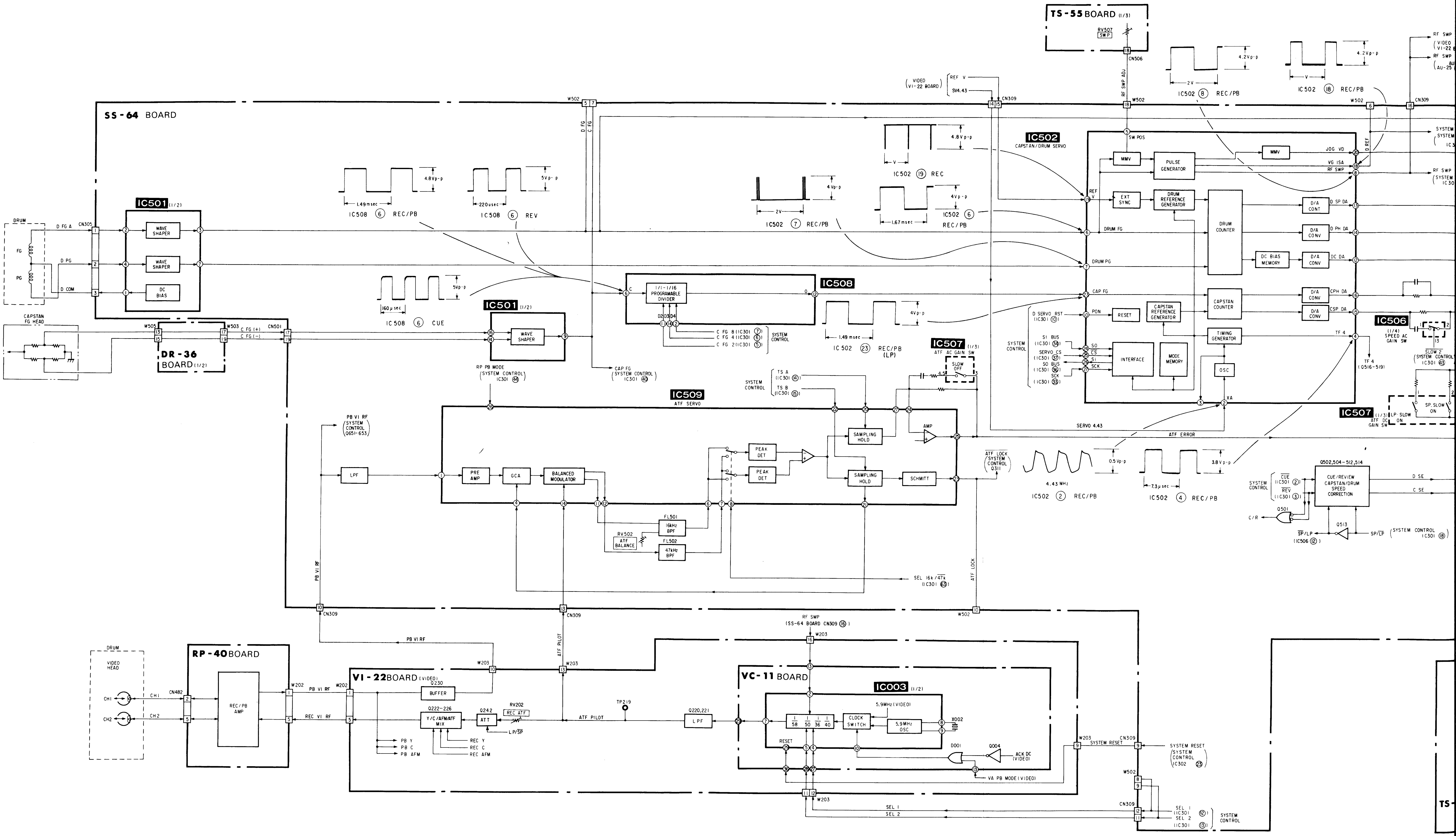

VIDEO IN
AGC OUT Y (REC VIDEO)
MIX Y (REC/PB Y)
PB Y
IC202
Q270-273
VY-9 BOARD ⑮ REC/PB
COMB IN C (PB C)
COMB OUT C (REC/PB C)
VD-6 BOARD ⑬ REC
VD-6 BOARD ⑬ PB
SC-6 BOARD (VIDEO)
V IN
CN208
CN384
VIDEO IN
ATT
CN385 MULTI CONNECTOR
TP208
VIDEO OUT2
CN206
VIDEO OUT
VD-6 BOARD
IC001
COMB FILTER
BURST P (VC-11 ㉑)
ACK DC (VC-11 ⑰)
AGC OUT Y
Y/C SEP
COMB OUT Y
Y LPF
EQ
VA PB MODE (IC201 ④)
VA PB MODE (Q003)
DL201 (1/2)
2H DELAY
Q243
INHIBIT
LV201 CP
VA PB MODE (IC201 ⑦)
RV002 CD
NON-CORR
CORR
REC
PB
B/W
COLOR
PB ON
CHROMA TRAP
PB Y
COMB OUT C
CORRELAION DET
PEAK DET
RV203 YD
LPF
AGC DET
AM DET
DROP OUT
NORMAL
H SYNC INSERT
LIMITER
REC ON
PB ON
DROP OUT P (VY-9 ②)
1H DELAY
AM MOD
CLAMP
JOG
JOG (IC201 ②)
13.3MHz
X201
HD INSERT
VA PB MODE (㉗)
Q002, 003 CORR DET SENS SW
Q005 SP/LP SWITCH
Y-YD LIM OUT
Y-YD
EDIT (Q201)
LP/SP (Q202)
VD-6 BOARD ② PB
0.44Vp-p
CN209
RETURN VIDEO
CAM REC
TO EVF
VA PB MODE (IC201 ⑦)
CAM/LINE (IC201 ⑤)
Q229
IC004
AFC, PULSE GENERATOR
ACK DC (Q002)
VIDEO MUTE (IC201 ⑨)
V SEP
SW P×1/2 FH PULSE GENERATOR
HALF H KILLER
SYNTHESIS GATE
VI SW P (⑯)
C SYNC (VY-9 ⑮)
VA PB MODE (⑬)
SYSTEM R (IC201 ⑬)
1/375
DELAY PULSE GENERATOR
1/8
AFC AFC ID
375 fH
(47-1/8) fH
ACK C
REF V (W203 ⑮)
JOG VD (VY-9 ⑰)
JOG VD (W203 ⑰)
VD
AGC P (VY-9 ⑯)
BURST P (VD-6 ㉑)
6.2Vp-p
VC-11 BOARD ㉒ REC
4.2Vp-p
VC-11 BOARD ㉒ PB
H SYNC
PB CHROMA
Q005
ACK DC (Q002)
6dB
APC CORRECTION
GCA
4.43MHz (IC002 ⑭)
QUASI BURST
MAIN SWITCH
RV003 GCA
GCA ADJ
PHASE SHIFT
1/2 FH
BURST ID DET
SEQUENCE DET
SWITCH CONTROL
D002
SHAPER
IIL LOGIC
CLF GENERATOR
BF (IC002 ⑳㉑)
LPF
CLF (VY-9 ㉝)
S/H
FH VCO
RV004 fH VCO
D003
VA PB MODE (⑬)
JOG (⑭)
IC003
JOG CHROMA PROCESS
VCO H IN
VCO S/H
OSC C
CAMERA IN
IC201
EXPANSION PORT
Q250
MP/ME
Q202
LP/SP
SP/LP
JOG
ME/MP
VA PB MODE
CAMERA/LINE
TALLY
EDIT
Q201
V MUTE
AUDIO MUTE
SP JOG
SYSTEM RESET
STB
SO
SCK
W203
SYSTEM RESET
VA SP STB
SO
SCK
JOG VD
JOG VD (VY-9 ⑰)
RP PB MODE (W202 ④)
RP PB MODE
TO SYSTEM CONTROL
CC-6 BOARD (1/2)
J901 ACCESS
IN
OUT
Q281 CAMERA VIDEO MUTE
VA PB MODE (IC201 ④)
CN201
W901
CAMERA OUT
Q906 BUFFER
Q901-905
EXT
INT
W903
CAM IN
CC CONT
VIDEO IN
TO CAMERA (1)

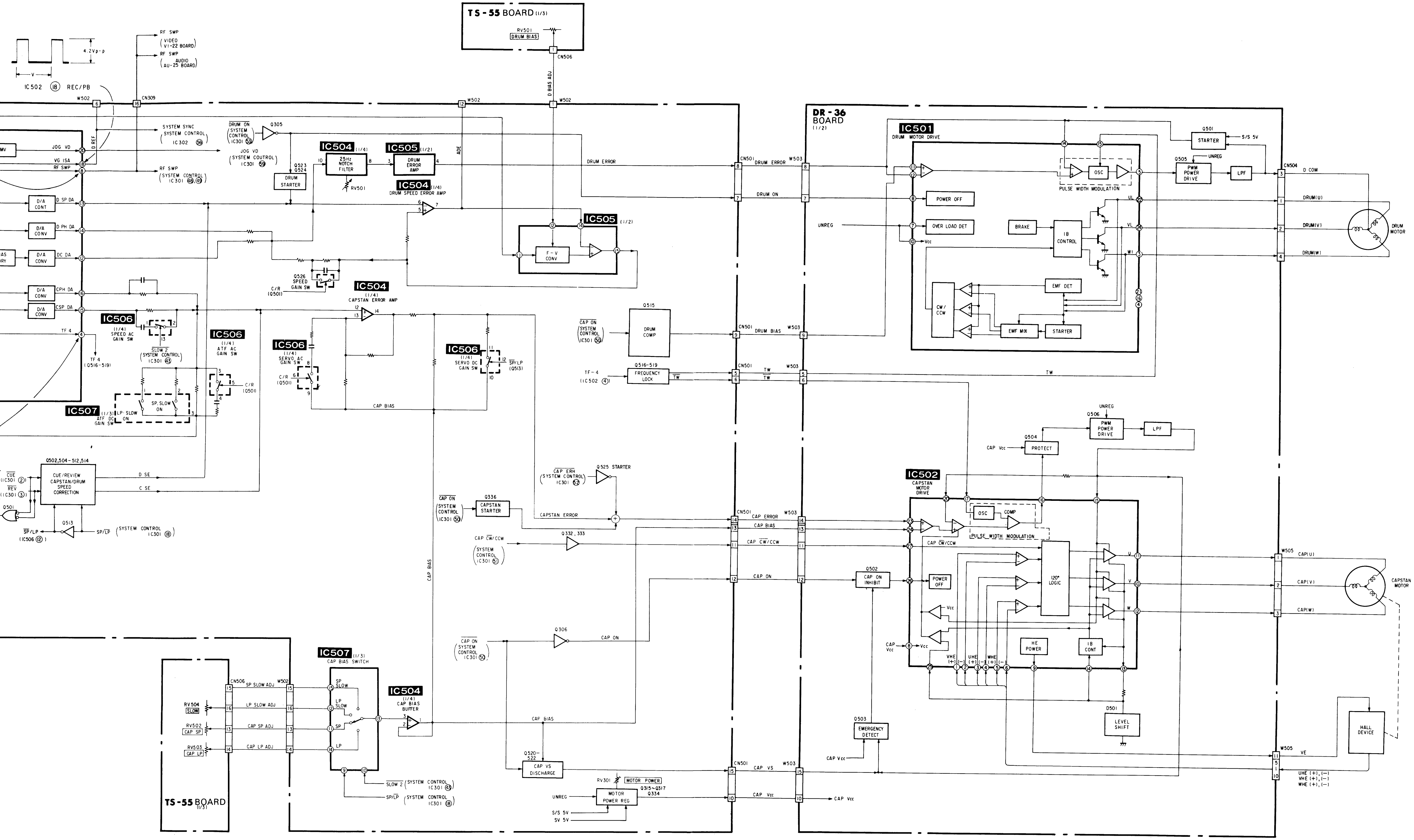
3-7. VIDEO BLOCK DIAGRAM (2)



RP-40 BOARD
RP-34 BOARD
3.6Vp-p
2V
RP-34 BOARD ㉒㉗ REC
0.18Vp-p
2V
RP-34 BOARD ⑭⑮ PB
4Vp-p
2V
RP-34 BOARD ⑥ REC/PB
CN483
RF CH 1
RF SW P
TP484
SL CHECK
DRUM
VIDEO HEAD CH 1
VIDEO HEAD CH 2
CH 1(X)
CH 2(X)
CN482
CN483
RF CH 2
CN481
EF(X)
FLYING ERASE HEAD
RV 003
CH1 PB EQ
RV004
CH2 PB EQ
DUMPING
CH 1 HEAD AMP
CH 1 2ND AMP
CH 2 HEAD AMP
CH 2 2ND AMP
BUFFER
AMP
6dB ATT
IC001
REC/PB AMP
PB V1 RF
PB PCM RF
AF REC
Q001
PB 5V
RP PB MODE
RF SW P
REC AREA
RV001
REC V1
TP482
CH 1 CHECK
CH 1 REC AMP
CH 2 REC AMP
V-I CONV
V VOL
PCM VOL
REC V1 RF
REC PCM RF
W202
PB V1 RF
TO VIDEO(1)
REC V1 RF
ME/MP
H:0.2μsec/div
V:0.2V/div
RP-34 BOARD ④ REC
RF SW P(SERVO)
RP PB MODE
FE ON
TO SYSTEM CONTROL
Q481,482
OSC
Q483
OSC SWITCH
Q484
ERASE CURRENT SWITCH
0.4Vp-p
H
RP-34 BOARD ⑳(TP482) REC

3-8. SERVO BLOCK DIAGRAM


TS-55 BOARD (1/3)
RV507 SWP
SS-64 BOARD
IC501 (1/2)
WAVE SHAPER
WAVE SHAPER
DC BIAS
DRUM
FG
PG
D FG A
D PG
D COM
CN305
CAPSTAN FG HEAD
W505
DR-36 BOARD (1/2)
W503
C FG (+)
C FG (−)
CN501
IC501 (1/2)
WAVE SHAPER
RP PB MODE (SYSTEM CONTROL IC301 ㊹)
IC508
1/1-1/16 PROGRAMABLE DIVIDER
C FG 8 (IC301 ⑦)
C FG 4 (IC301 ⑥)
C FG 2 (IC301 ⑤)
SYSTEM CONTROL
CAP FG (SYSTEM CONTROL IC301 ④)
IC508 ⑥ REC/PB
4.8Vp-p
1.49msec
IC508 ⑥ REV
5Vp-p
220usec
IC508 ⑥ CUE
5Vp-p
160μsec
IC502 ⑦ REC/PB
4Vp-p
2V
IC502 ⑲ REC
4.8Vp-p
IC502 ⑥ REC/PB
4Vp-p
1.67msec
IC502 ㉓ REC/PB (LP)
4Vp-p
1.49msec
VIDEO (VI-22 BOARD)
REF V
SV4.43
CN309
W502
RF SWP ADJ
CN506
IC502 ⑧ REC/PB
4.2Vp-p
2V
IC502 ⑱ REC/PB
4.2Vp-p
IC502
CAPSTAN/DRUM SERVO
SW POS
MMV
PULSE GENERATOR
MMV
JOG VD
VG ISA
RF SWP
D REF
REF V
EXT SYNC
DRUM REFERENCE GENERATOR
DRUM COUNTER
D/A CONT
D SP DA
D/A CONV
D PH DA
DC BIAS MEMORY
D/A CONV
DC DA
DRUM FG
DRUM PG
CAP FG
CAPSTAN COUNTER
D/A CONV
CPH DA
D/A CONV
CSP DA
D SERVO RST (IC301 ⑩)
PON
RESET
CAPSTAN REFERENCE GENERATOR
TIMING GENERATOR
TF 4
SYSTEM CONTROL
SI BUS (IC301 ㉛)
SERVO CS (IC301 ㉜)
SO BUS (IC301 ㉚)
SCK (IC301 ㉝)
SO
CS
SI
SCK
INTERFACE
MODE MEMORY
OSC
XA
SERVO 4.43
ATF ERROR
IC506 (1/4) SPEED AC GAIN SW
TF 4 (Q516-519)
SLOW 2 (SYSTEM CONTROL IC301 ㊸)
SP, SLOW ON
IC507 (1/3) ATF DC GAIN SW
LP SLOW ON
IC507 (1/3) ATF AC GAIN SW
SLOW OFF
SYSTEM CONTROL
TS A (IC301 ⑯)
TS B (IC301 ⑮)
IC509
ATF SERVO
PB VI RF (SYSTEM CONTROL Q651-653)
LPF
PRE AMP
GCA
BALANCED MODULATOR
PEAK DET
PEAK DET
SAMPLING HOLD
SAMPLING HOLD
AMP
SCHMITT
FL501 16kHz BPF
FL502 47kHz BPF
RV502 ATF BALANCE
SEL 16k/47k (IC301 ㊸)
ATF LOCK (SYSTEM CONTROL Q311)
ATF LOCK
4.43MHz
0.5Vp-p
IC502 ② REC/PB
3.8Vp-p
7.3μsec
IC502 ④ REC/PB
Q502,504-512,514
CUE/REVIEW CAPSTAN/DRUM SPEED CORRECTION
SYSTEM CONTROL
CUE (IC301 ②)
REV (IC301 ③)
Q501
C/R
SP/LP (IC506 ⑫)
Q513
SP/LP
(SYSTEM CONTROL IC301 ⑱)
D SE
C SE
PB VI RF
CN309
W502
RF SWP (SS-64 BOARD CN309 ⑯)
DRUM
VIDEO HEAD
CH1
CH2
RP-40 BOARD
CN482
REC/PB AMP
W202
PB VI RF
REC VI RF
VI-22 BOARD (VIDEO)
Q230 BUFFER
Q222-226 Y/C/AFM/ATF MIX
Q242 ATT
RV202 REC ATF
L/P/SP
PB Y
PB C
PB AFM
REC Y
REC C
REC AFM
W203
ATF PILOT
TP219
Q220,221 LPF
VC-11 BOARD
IC003 (1/2)
5.9MHz (VIDEO)
1/58 1/50 1/36 1/40
CLOCK SWITCH
5.9MHz OSC
X002
RESET
D001
Q004
ACK DC (VIDEO)
VA PB MODE (VIDEO)
SYSTEM RESET
SYSTEM RESET (SYSTEM CONTROL IC302 ㉓)
SEL 1 (IC301 ⑫)
SEL 2 (IC301 ⑬)
SYSTEM CONTROL
TS


4.2Vp-p
V
IC502 ⑱ REC/PB
RF SWP
(VIDEO VI-22 BOARD)
RF SWP
(AUDIO AU-25 BOARD)
W502
CN309
TS-55 BOARD (1/3)
RV501
DRUM BIAS
CN506
D BIAS ADJ
W502
D REF
JOG VD
VG ISA
RF SWP
SYSTEM SYNC
(SYSTEM CONTROL IC302 ㊾)
DRUM ON (SYSTEM CONTROL IC301 ㊿)
Q305
JOG VD (SYSTEM COUTROL IC301 ㊾)
RF SWP (SYSTEM CONTROL IC301 ㊽,㊾)
Q523 Q524
DRUM STARTER
IC504 (1/4)
25Hz NOTCH FILTER
RV501
IC505 (1/2)
DRUM ERROR AMP
IC504 (1/4)
DRUM SPEED ERROR AMP
ADE
DRUM ERROR
D/A CONT
D SP DA
D/A CONV
D PH DA
D/A CONV
DC DA
Q526 SPEED GAIN SW
C/R (Q501)
IC505 (1/2)
F-V CONV
D/A CONV
CPH DA
D/A CONV
CSP DA
TF 4
IC506 (1/4) SPEED AC GAIN SW
SLOW 2 (SYSTEM CONTROL IC301 ㊸)
TF 4 (Q516-519)
IC506 (1/4) ATF AC GAIN SW
IC504 (1/4) CAPSTAN ERROR AMP
IC506 (1/4) SERVO AC GAIN SW
C/R (Q501)
IC506 (1/4) SERVO DC GAIN SW
SP/LP (Q513)
C/R (Q501)
IC507 (1/3) ATF DC GAIN SW
LP·SLOW ON
SP,SLOW ON
CAP BIAS
Q502,504-512,514
CUE/REVIEW CAPSTAN/DRUM SPEED CORRECTION
CUE (IC301 ②)
REV (IC301 ③)
D SE
C SE
Q501
Q513
SP/LP (IC506 ⑫)
SP/LP (SYSTEM CONTROL IC301 ⑱)
CAP ERH (SYSTEM CONTROL IC301 ㊷)
Q525 STARTER
CAP ON (SYSTEM CONTROL IC301 ㊿)
Q336 CAPSTAN STARTER
CAPSTAN ERROR
CAP CW/CCW (SYSTEM CONTROL IC301 ㊿)
Q332,333
CAP BIAS
CAP ON (SYSTEM CONTROL IC301 ㊿)
Q306
CAP ON
Q515 DRUM COMP
CAP ON (SYSTEM CONTROL IC301 ㊿)
TF-4 (IC502 ④)
Q516-519 FREQUENCY LOCK
TW
CN501
DRUM ERROR
DRUM ON
DRUM BIAS
CAP ERROR
CAP BIAS
CAP CW/CCW
CAP ON
CAP VS
CAP Vcc
W503
TS-55 BOARD (1/3)
CN506
W502
RV504 SLOW
SP SLOW ADJ
RV502 CAP SP
LP SLOW ADJ
RV503 CAP LP
CAP SP ADJ
CAP LP ADJ
IC507 (1/3) CAP BIAS SWITCH
SP SLOW
LP SLOW
SP
LP
IC504 (1/4) CAP BIAS BUFFER
SLOW 2 (SYSTEM CONTROL IC301 ㊸)
SP/LP (SYSTEM CONTROL IC301 ⑧)
Q520-522 CAP VS DISCHARGE
RV301 MOTOR POWER
Q315~Q317 Q334
MOTOR POWER REG
UNREG
S/S 5V
SV 5V
DR-36 BOARD (1/2)
IC501 DRUM MOTOR DRIVE
PULSE WIDTH MODULATION
OSC
POWER OFF
OVER LOAD DET
UNREG
BRAKE
18 CONTROL
EMF DET
CW/CCW
EMF MIX
STARTER
Q501 STARTER
S/S 5V
Q505 PWM POWER DRIVE
UNREG
LPF
CN504
D COM
DRUM(U)
DRUM(V)
DRUM(W)
UL VL WL
DRUM MOTOR
TW
UNREG
Q506 PWM POWER DRIVE
LPF
Q504 PROTECT
CAP Vcc
IC502 CAPSTAN MOTOR DRIVE
OSC
COMP
PULSE WIDTH MODULATION
CAP CW/CCW
Q502 CAP ON INHIBIT
POWER OFF
120° LOGIC
HE POWER
18 CONT
CAP Vcc
VHE (+)(−) UHE (+)(−) WHE (+)(−)
D501 LEVEL SHIFT
Q503 EMERGENCY DETECT
CAP Vcc
W505
CAP(U)
CAP(V)
CAP(W)
CAPSTAN MOTOR
HALL DEVICE
VE
UHE (+),(−)
VHE (+),(−)
WHE (+),(−)
CAP Vcc

3-9. MODE CONTROL CPU (IC302 on SS-64 Board) — PERIPHERAL CIRCUITS INTERFACE

Signal name	I/O	Pin No.	Input/Output level
$\overline{\text{TEST}}$	I	1	Pull-up to "H" level. It becomes TEST mode when "L".
$\overline{\text{SAFTY}}$	I	2	Fixed at "L" level.
$\overline{\text{EXT POWER ON}}$	I	3	"L" when the power supply of equipments (AC adaptor or T/T unit) which is connected to multi-connector is ON.
VTR POWER ON	I	4	"L" when the VTR POWER button of the main unit or the remote commander is pressed.
CAMERA POWER ON	I	5	"L" when the CAMERA POWER switch S674 (CG-1 board) is pressed.
START/STOP	I	6	Pull-up to "H" level.
$\overline{\text{EJECT}}$	I	7	Pull-up to "H" level.
VA SP STB	O	8	A strobe signal (V cycle "H" pulse) for the EXPANSION PORT (IC201 on VI-22 board)
MECHA CS	O	9	A communication request signal (V cycle "H" pulse) to the mechanism control CPU (IC301 on SS-64 board)
LS TBC CS	O	10	A communication request signal (V cycle "L" pulse) to the control L CPU (IC 303 on SS-64 board)
DDS CS	O	11	A communication request signal (V cycle "H" pulse) to the CAMERA system control CPU (IC601 on FC-10 board)
HMS/$\overline{\text{REEL}}$	I	14	Pull up to the "H" level of the counter display selection input.
SP/$\overline{\text{LP}}$	I	15	"H" when the SP/LP switch (S309 on SK-12 board) is on the SP side.
$\overline{\text{CLOG}}$	I	16	During SP mode playback, "H" when the PB RF signal is played back normally.
$\overline{\text{EDIT}}$	I	17	"L" when the EDIT switch (S310 on SK-12 board) is at ON.
$\overline{\text{PB SP}}$	I	18	Pull-up to "H" level.
$\overline{\text{PB LP}}$	I	19	Pull-up to "H" level.
$\overline{\text{VTR ON}}$	O	20	When it is at "L", the DC-DC converter (DR201) on VI-22 board is turned ON.
$\overline{\text{CAM ON}}$	O	21	When it is at "L", the DC-DC converter on the CAMERA is turned ON.
BE/$\overline{\text{PD}}$	O	22	"L" when in the battery pre-end detection and TEST mode.
SYSTEM RESET	O	23	When the power supply is turned ON, reset the respective CPUs. ("L" when resetting)
$\overline{\text{VTR LED}}$	O	27	"L" when VTR mode or VTR + CAMERA mode.
$\overline{\text{RESET}}$	I	32	A resetting input when turning the UNREG power supply ON/OFF. ("L" pulse when resetting)
SCK	I/O	33	Serial data transfer clock input/output for communication to the respective CPUs ("L" pulse train of the V cycle)
SO	O	34	Serial data output for communication to the respective CPUs ("H" pulse train of the V cycle)
SI	I	36	Serial data input for communication to the respective CPUs ("L" pulse train of the V cycle)
WAKE UP	I	39	A selection pulse (⎍) input from the power save mode to the normal mode
COUNTER	I	40	A pulse (⊔) input for the tape counter when in CUE/REVIEW and FF/REW modes
DDS RESET	O	41	A reset signal output ("H" when resetting) for the CAMERA system control CPU (IC601 on FC-10 board)
RF SW PULSE	I	48	A pulse input of 25Hz duty 50%

Signal name	I/O	Pin No.	Input/Output level
OSC ON	0	50	"H" when FF/REW mode and CUE/REV mode.
FF + REW	O	51	"H" when FF/REW mode.
SYSTEM SYNC	I	59	An interruption request signal from the servo IC (IC502 on SS-64 board) (V cycle pulse)
CAP $\overline{\text{CW}}$/CCW	I	60	An input for the tape counter. "H" when the capstan is rotating in FWD direction.
$\overline{\text{CAP ON}}$	I	61	An input for the tape counter. "L" when the capstan is rotating.
$\overline{\text{DEW S}}$	I	62	"L" when dew condensation is generated in the mechanism
$\overline{\text{BATT DOWN}}$	O	64	"L" when the battery is down

3-10. SY

Sign
SP/$\overline{\text{LP}}$
JOG
ME/$\overline{\text{MP}}$
VA PB M
CAM/LIN
TALLY
$\overline{\text{VA PB M}}$
$\overline{\text{EDIT}}$
V MUTE
A MUTE
SP JOG
SYSTEM
FE ON
RP PB M
JOG VD
$\overline{\text{VTR ON}}$
$\overline{\text{CAM ON}}$

*1 Mainta
*2 Depen
*3 Depen
*4 "H" wh
*5 "L" wh
*6 Pulse
*7 "L" wh
section
*8 "L" wh
*9 Depen

ard) (V cycle

D direction.

3-10. SYSTEM CONTROL — CAMERA, VIDEO AND AUDIO BLOCKS INTERFACE

Signal name	I/O	REF No. PIN No.	STOP	FF	REW	CUE	RE-VIEW	PB	PB/PAUSE	FRA-ME	REC	REC/PAUSE	RE-VERSE
SP/$\overline{\text{LP}}$	O	VI-22 board IC201 ①	*9	*9	*9	*1	*1	*2	*1	*1	*9	*9	*1
JOG	O	VI-22 board IC201 ②	L	L	L	H	H	L	H	H	L	L	H
ME/$\overline{\text{MP}}$	O	VI-22 board IC201 ③	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
VA PB MODE	O	VI-22 board IC201 ④	L	L	L	H	H	H	H	H	L	L	H
CAM/$\overline{\text{LINE}}$	O	VI-22 board IC201 ⑤	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4	L*4
TALLY	O	VI-22 board IC201 ⑥	L	L	L	L	L	L	L	L	L*4	L	L
$\overline{\text{VA PB MODE}}$	O	VI-22 board IC201 ⑦	H	H	H	L	L	L	L	L	H	H	L
$\overline{\text{EDIT}}$	O	VI-22 board IC201 ⑧	H	H	H	H	H	H*5	H*5	H*5	H	H	H
V MUTE	O	VI-22 board IC2-1 ⑨	L	L	L	L	L	L	L	L	L	L	L
A MUTE	O	VI-22 board IC 201 ⑪	L	L	L	H	H	L	H	H	L	L	H
SP JOG	O	VI-22 board IC201 ⑫											
SYSTEM RESET	O	VI-22 board IC201 ⑬	L	L	L	L	L	L	L	L	L	L	L
FE ON	O	SS-64 board IC301 ㊷	L	L	L	L	L	L	L	L	H	L	L
RP PB MODE	O	SS-64 board IC301 ㊹	L	L	L	H	H	H	H	H	L	L	H
JOG VD	O	SS-64 board IC301 ㊺	L	L	L	*6	*6	L	*6	*6	L	L	*6
$\overline{\text{VTR ON}}$	O	SS-64 board IC302 ⑳	L	L	L	L	L	L	L	L	L	L	L
$\overline{\text{CAM ON}}$	O	SS-64 board IC302 ㉑	H*7	H*7	H*7	H*7	H*7	H*7	H*7	H*7	H*8	H*8	H*7

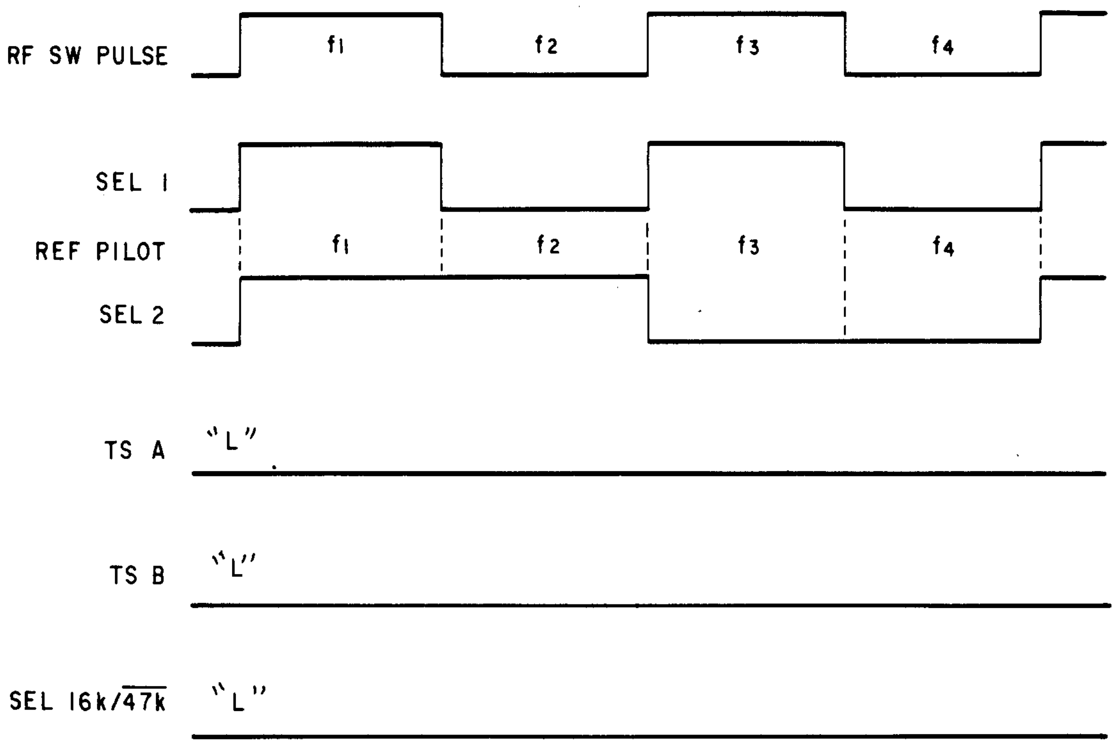
*1 Maintains the prior level.
*2 Dependent upon recording mode (SP/LP) of playback tape.
*3 Dependent upon the type of tape.
*4 "H" when power supply is ON ($\overline{\text{CAM ON}}$ = "L") at the camera section.
*5 "L" when EDIT switch (S310 on SK-12 board) is ON.
*6 Pulse of V cycle (⎍).
*7 "L" when VTR+CAMERA mode (After turning the VTR POWER ON with the VTR POWER switch, operate the camera section by pressing the CAMERA POWER switch).
*8 "L" when VTR+CAMERA or CAMERA mode.
*9 Dependent upon SP/LP selector (S309 on SK-12 board).

3-11. MECHANISM CONTROL CPU (IC301 on SS-64 board) — SERVO BLOCK INTERFACE

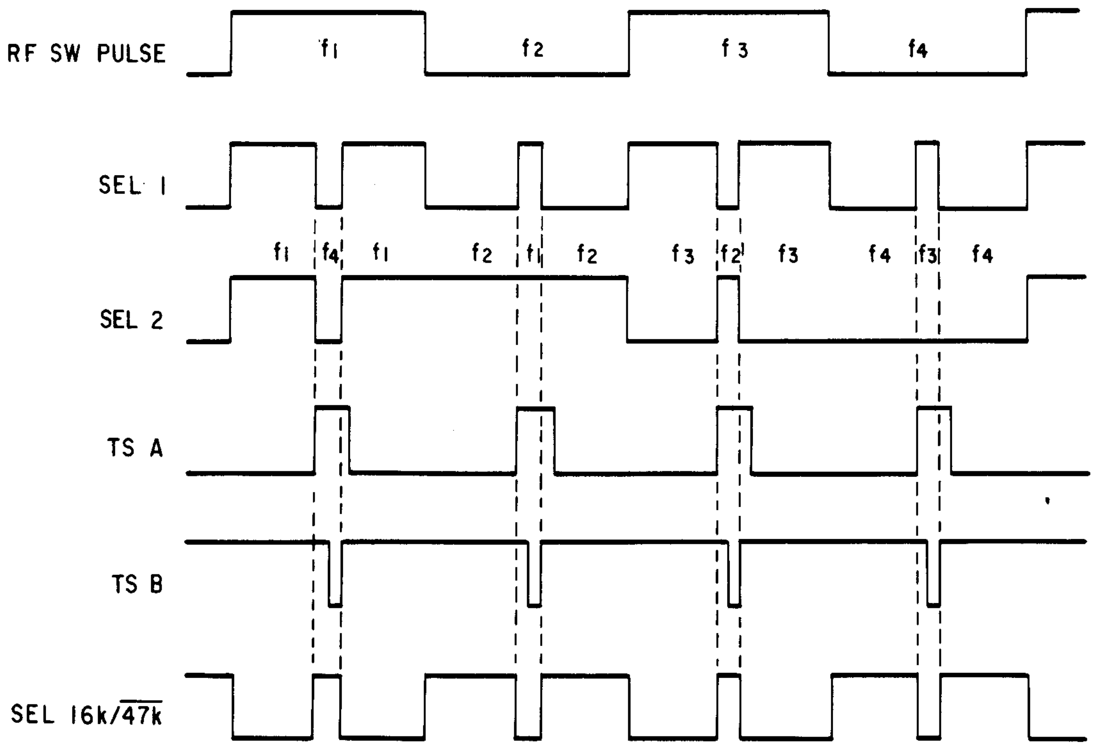
Signal name	I/O	Pin No.	STOP	FF	REW	CUE	REVIEW	PB	PB/PAUSE	FRA-ME	REC	REC/PAUSE	REVERSE *1
$\overline{\text{CUE}}$	O	②	H	H	H	L	H	H	H	H	H	H	H
$\overline{\text{REVIEW}}$	O	③	H	H	H	H	L	H	H	H	H	H	H
CFG 2	O	⑤	L	H	H	L	H	L	L	L	L	L	L
CFG 4	O	⑥	L	L	H	L	H	L	L	L	L	L	L
CFG 8	O	⑦	L	H	H	H	L	L	L	L	L	L	L
D SERVO RESET	O	⑩	L	L	L	L	L	L	L	L	L	L	L
D COMP	O	⑪	L	L	L	L	L	L	L	L*2	L	L	L
SEL 1	O	⑫	H	H	H	*3	*4	*5	H	H*7	*9	H	*10
SEL 2	O	⑬	H	H	H	*3	*4	*5	H/L	H/L	*9	H/L	*10
TS A	O	⑭	L	L	L	*3	*4	*5	L	L	L	L	*10
TS B	O	⑮	L	L	L	*3	*4	*5	*6	*8	L	L	*10
M SP/$\overline{\text{LP}}$	O	⑱	*11	*11	*11	*12	*12	*13	*12	*12	*11	*11	*12
SCK	I/O	㉝	Serial communication with servo IC (IC502 on SS-64 board)										
SI	O	㉞											
SO	I	㊱											
$\overline{\text{CAP FG}}$	I	㊵	H/L	*14	*14	*14	*14	*14	H/L	*14	*14	H/L	*14
$\overline{\text{SLOW 2}}$	O	㊸	H	H	H	H	H	H	L	L	H	H	H
RP PB MODE	O	㊹	L	L	L	H	H	H	H	H	L	L	H
RF SW PULSE	I	㊽ ㊾	L	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15
$\overline{\text{CAP ON}}$	O	㊿	H	L	L	L	L	L	H	H*7	L	H	L
$\overline{\text{CAP}}$ CW/$\overline{\text{CCW}}$	O	(51)	H	H	L	H	L	H	H	H*7	H	H	L
$\overline{\text{CAP ERH}}$	O	(52)	H	H	H	H	H	H	H	H*7	H	H	H
$\overline{\text{DRUM ON}}$	O	(53)	H	L	L	L	L	L	L	L	L	L	L
SST	I	(55)	H	25Hz· trapezoidal wave which has been synchronized with RF SW PULSE									
JOG VD	I	(59)	L	*16	*16	*16	*16	*16	*16	*16	*16	*16	*16
SEL 16K/$\overline{\text{47K}}$	O	(63)	L	L	L	*3	*4	*5	H	H*17	L	L	*10

*1 Performed only during REC REVIEW.
*2 "H" pulse during frame forwarding (⎍).
*3 See timing chart 4.
*4 See timing chart 5.
*5 See timing chart 2.
*6 See timing chart 3.
*7 "L" pulse during frame forwarding (⊔).
*8 V cycle "L" pulse. However no "L" pulse during frame forwarding.
*9 See timing chart 1.
*10 See timing chart 6.
*11 Dependent upon SP/LP selector (S309 on SK-12 board).
*12 Maintains prior level.
*13 Dependent upon recording mode (SP/LP) of playback tape.
*14 The frequency pulse proportionate to the rotating number of the capstan motor.
*15 25 Hz 50% duty pulse.
*16 V cycle "H" pulse.
*17 "L" pulse during frame forwarding (⊔⊔).

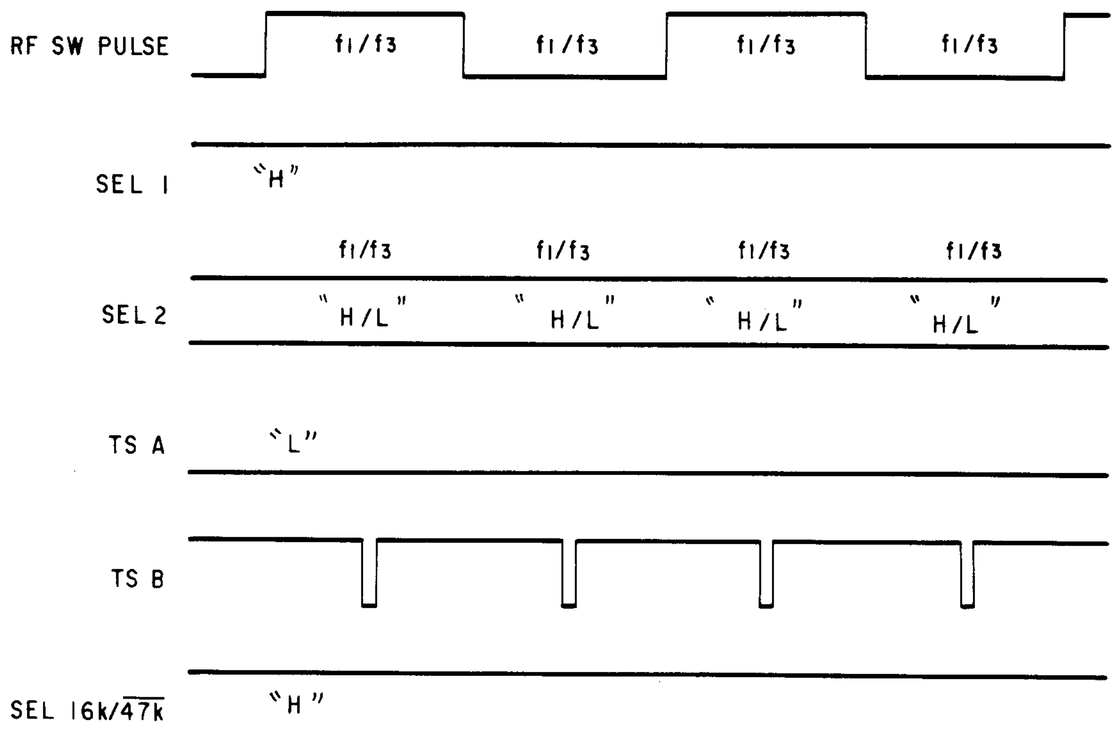
3-12. TIMING CHART 1 (REC)


RF SW PULSE
f1
f2
f3
f4
SEL 1
REF PILOT
f1
f2
f3
f4
SEL 2
TS A
"L"
TS B
"L"
SEL 16k/$\overline{47k}$
"L"

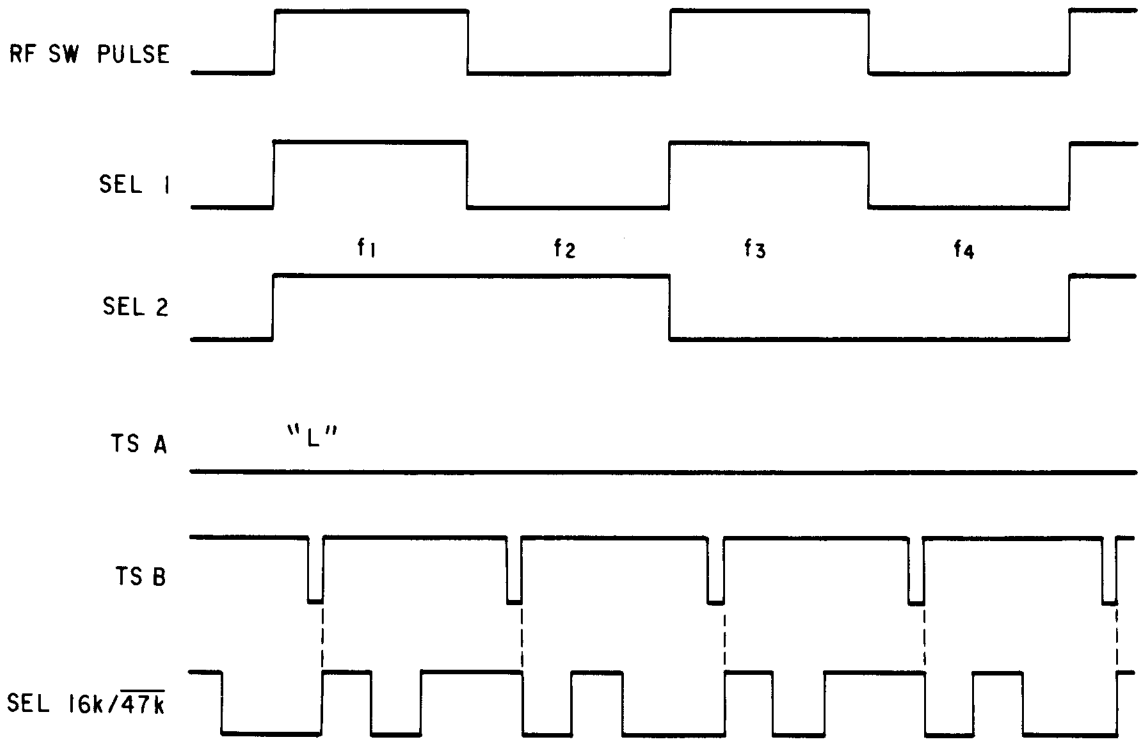
3-13. TIMING CHART 2 (PB)


RF SW PULSE
f1
f2
f3
f4
SEL 1
f1
f4
f1
f2
f1
f2
f3
f2
f3
f4
f3
f4
SEL 2
TS A
TS B
SEL 16k/$\overline{47k}$

3-14. TIMING CHART 3 (PB·PAUSE)


RF SW PULSE
f1/f3
f1/f3
f1/f3
f1/f3
SEL 1
"H"
f1/f3
f1/f3
f1/f3
f1/f3
SEL 2
"H/L"
"H/L"
"H/L"
"H/L"
TS A
"L"
TS B
SEL 16k/$\overline{47k}$
"H"

3-15. TIMING CHART 4 (CUE)


RF SW PULSE
SEL 1
f1
f2
f3
f4
SEL 2
TS A
"L"
TS B
SEL 16k/$\overline{47k}$

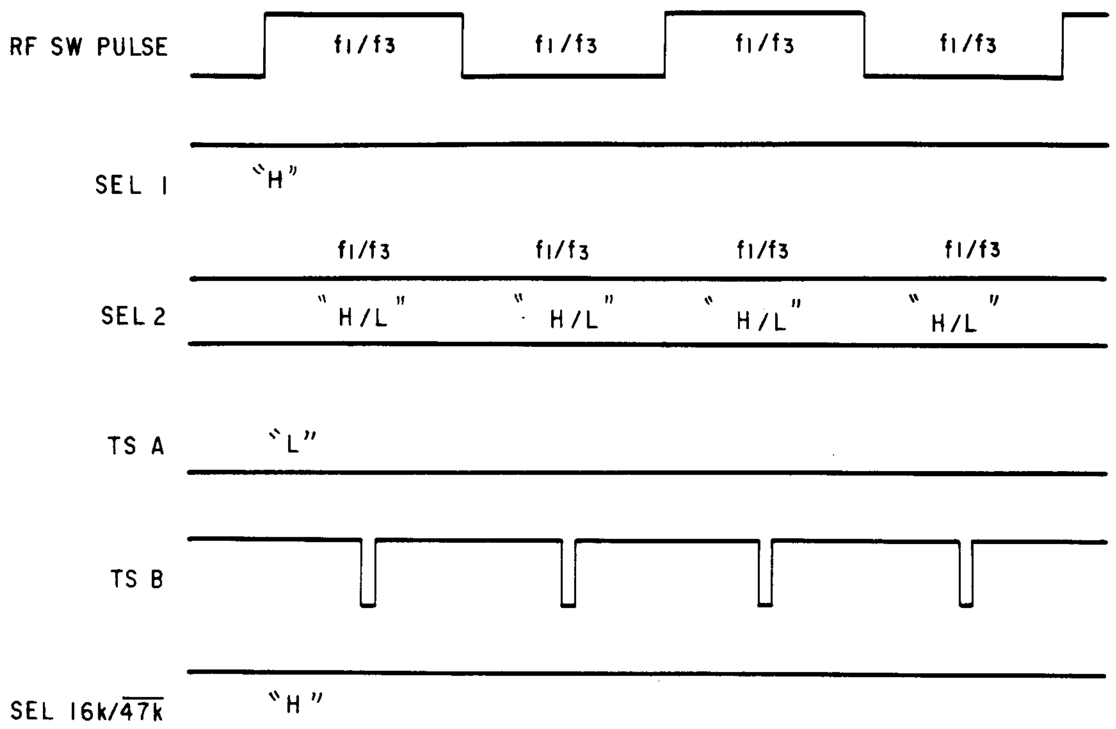
3-16. TIM

RF
SE

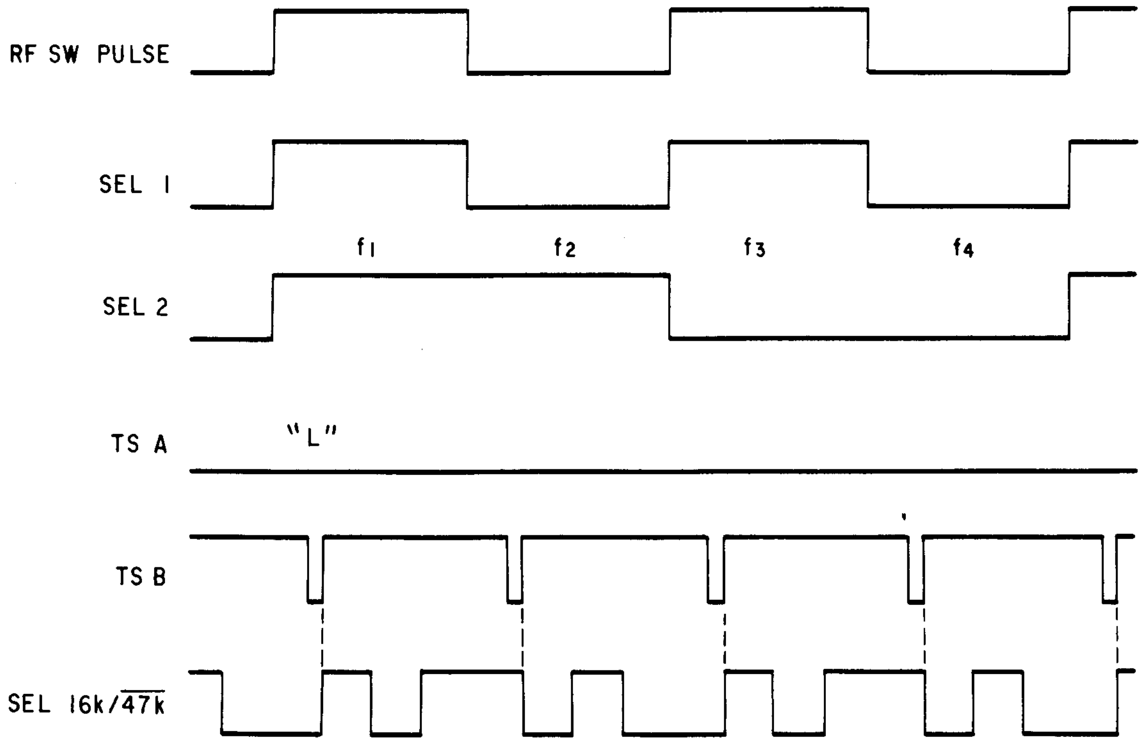
3-17. TIM

RF
SE

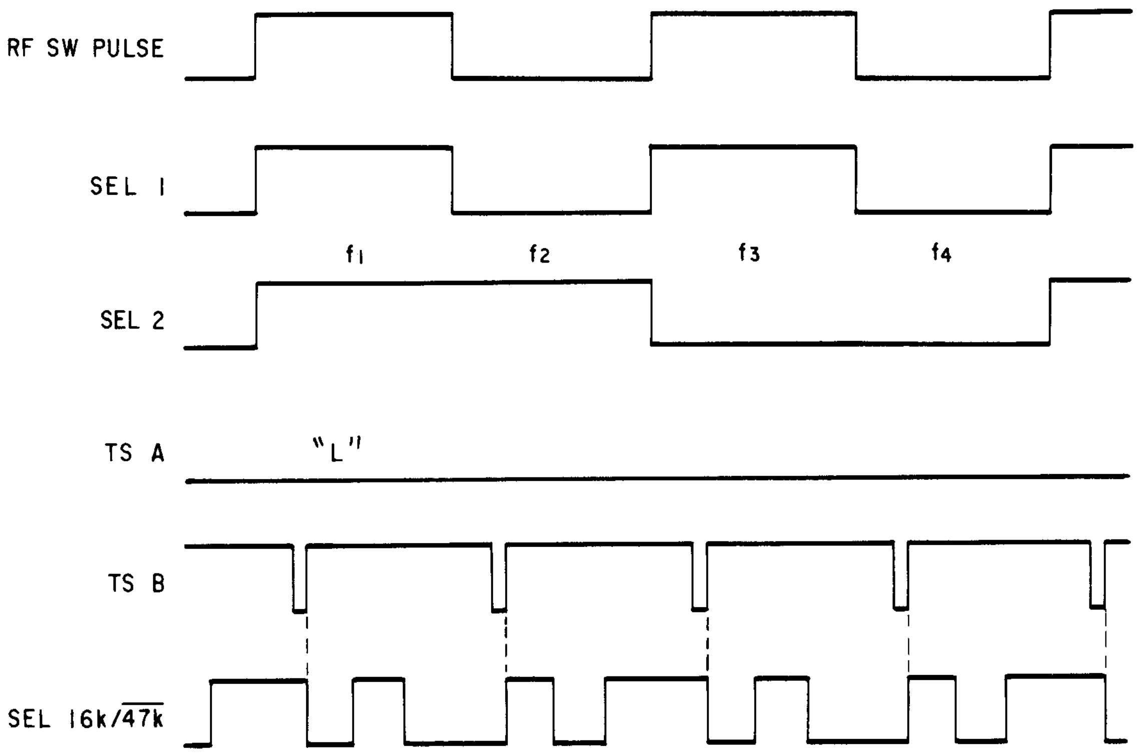
3-14. TIMING CHART 3 (PB·PAUSE)


RF SW PULSE
f1/f3
f1/f3
f1/f3
f1/f3
SEL 1
"H"
f1/f3
f1/f3
f1/f3
f1/f3
SEL 2
"H/L"
"H/L"
"H/L"
"H/L"
TS A
"L"
TS B
SEL 16k/$\overline{47k}$
"H"

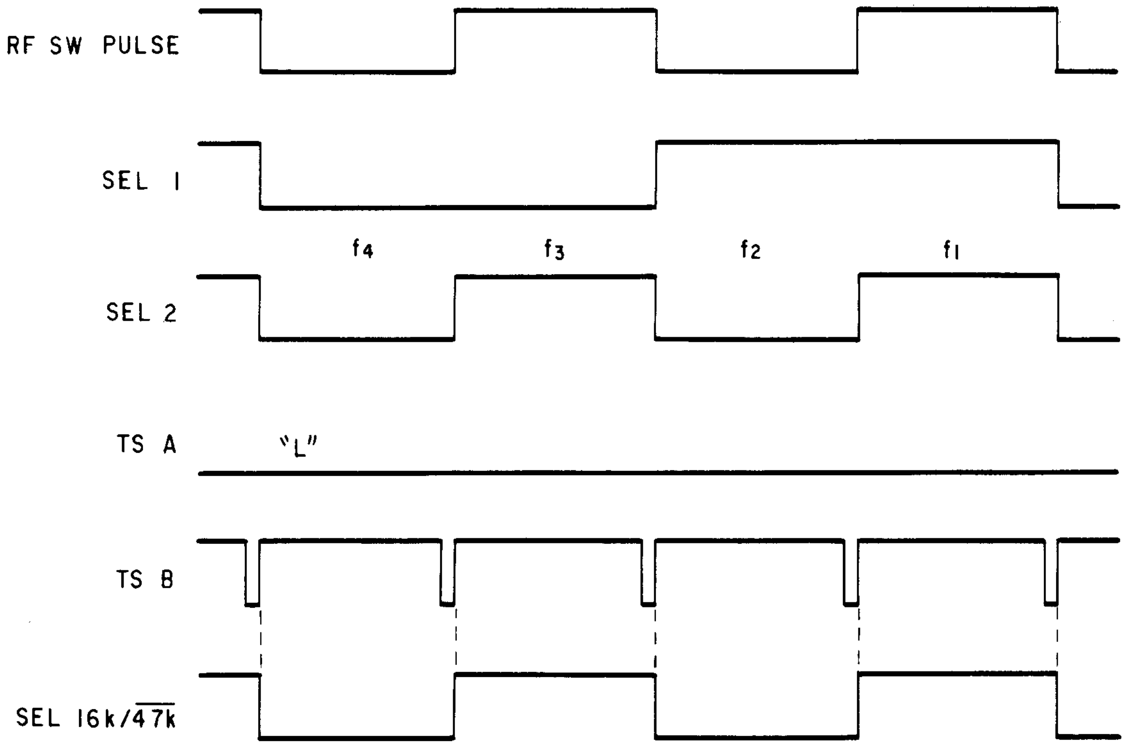
3-15. TIMING CHART 4 (CUE)


RF SW PULSE
SEL 1
f1
f2
f3
f4
SEL 2
TS A
"L"
TS B
SEL 16k/$\overline{47k}$

3-16. TIMING CHART 5 (REVIEW)


RF SW PULSE
SEL 1
f1
f2
f3
f4
SEL 2
TS A
"L"
TS B
SEL 16k/$\overline{47k}$

3-17. TIMING CHART 6 (REVERSE)


RF SW PULSE
SEL 1
f4
f3
f2
f1
SEL 2
TS A
"L"
TS B
SEL 16k/$\overline{47k}$

3-18. SYSTEM CONTROL – MECHANISM BLOCK INTERFACE

Signal name	I/O	REF.No., PIN No.	STOP	FF	REW	CUE	REV	PB	PB/ PAUSE	REC	REC/ PAUSE	RVS
MODE SW*1	I	SS-64 BOARD IC301 MATRIX IN	3	6	6	1	5	1	1	1	1	5
LOAD SW*2	I	SS-64 BOARD IC301 MATRIX IN	3	3	3	3	3	3	3	3	3	3
CASSETTE LOCK SW	I	SS-64 BOARD IC301 MATRIX IN	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
$\overline{\text{TAPE TOP}}$	I	SS-64 BOARD IC301 MATRIX IN	NC	NC	H	H/NC	H	NC	NC	NC	H	H
$\overline{\text{TAPE END}}$	I	SS-64 BOARD IC301 MATRIX IN	H/NC	H	NC	H	H	H	H	H	H	H
$\overline{\text{DEW (M)}}$	I	SS-64 BOARD IC301 MATRIX IN	"L" when dew condensation is generated (IC304 ①)									
REEL TA	I	SS-64 BOARD C301 MATRIX IN										
REEL TB	I	SS-64 BOARD C301 MATRIX IN										
REEL S	I	SS-64 BOARD C301 MATRIX IN										
CM CONT (CW)	O	SS-64 BOARD IC301 ⑯	L	L	L	L	L	L	L	L	L	L
CM CONT (CCW)	O	SS-64 BOARD IC301 ⑰	L	L	L	L	L	L	L	L	L	L
LM CONT (CW)	O	SS-64 BOARD IC301 ⑧	L	L	L	L	L	L	L	L	L	L
LM CONT (CCW)	O	SS-64 BOARD IC301 ⑨	L	L	L	L	L	L	L	L	L	L
$\overline{\text{BRAKE START}}$	O	SS-64 BOARD IC301 ㉘	H	H	H	H	H	H	H	H	H	H
$\overline{\text{BRAKE HOLD}}$	O	SS-64 BOARD IC301 ㉙	H	L	L	H	L	H	H	H	H	L
$\overline{\text{TAPE LED}}$	O	SS-64 BOARD IC301 ㉗	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
REEL LED	O	SS-64 BOARD IC301 ⑲	A pulse of approximately 1kHz									

*1 See "Mode switch pattern"
*2 See "Loading switch pattern"
*3 H/L pulse

3-19. MODE SWITCH PATTERN

Rotating direction of mode switch

(↻) CW ←——→ CCW (↺)

Switch position (mode)		EJECT		LOAD		FF/ REW		STOP		FWD		RVS	
Switch pattern	7	4	7	2	7	6	7	3	7	1	7	5	7
MODE SW A	×	○	×	○	×	○	×	×	×	×	×	×	×
MODE SW B	×	○	×	×	×	×	×	×	×	○	×	○	×
MODE SW C	×	×	×	○	×	×	×	○	×	○	×	×	×

○ . . . Short-circuit
× . . . Open

3-20. LOADING SWITCH PATTERN

Rotating direction of loading switch

(↺)CCW ←——→ CW (↻)

Switch position (mode)	LOADING TOP		UNLOAD WAIT		DRUM START		T REEL START		LOADING END
Switch pattern	1	7	5	7	4	7	6	7	3
LOAD SW A	×	×	×	×	○	×	○	×	×
LOAD SW B	○	×	○	×	○	×	×	×	×
LOAD SW C	○	×	×	×	×	×	×	×	○

○ . . . Short-circuit
× . . . Open

3-21. CAMERA SYSTEM CONTROL CPU (IC601 on FC-10 Board) – PERIPHERAL CIRCUITS INTERFACE

Signal name	I/O	Pin No.	Input/Output level
WR	O	2	"H" when the colour setting of wiper is at white, red, violet or yellow.
RESET	I	3	Normally "L". "H" pulse is input when the lithium battery is mounted or when the power supply turns ON without the lithium battery.
CL1	I	5	System clock oscillation pin (It oscillates continuously during the period the S/S 5V is at ON. Oscillation frequency: Approx. 330kHz) It oscillates approx. 70kHz intermittently every 0.5sec. during the lithium battery is in operation.
CL2	O	9	
DDS CS	I	10	Communication request signal ("H" pulse of V cycle) from mode control CPU (IC302 on SS-64 board)

C/ USE	RVS
1	5
3	3
N	ON
H	H
H	H
L	L
L	L
L	L
L	L
H	H
H	L
*3	*3

3-19. MODE SWITCH PATTERN

Rotating direction of mode switch

(↷) CW ◄————► CCW (↶)

Switch position (mode)		EJECT		LOAD		FF/ REW		STOP		FWD		RVS	
Switch pattern	7	4	7	2	7	6	7	3	7	1	7	5	7
MODE SW A	×	○	×	○	×	○	×	×	×	×	×	×	×
MODE SW B	×	○	×	×	×	×	×	×	×	○	×	○	×
MODE SW C	×	×	×	○	×	×	×	○	×	○	×	×	×

○ . . . Short-circuit
× . . . Open

3-20. LOADING SWITCH PATTERN

Rotating direction of loading switch

(↶)CCW ◄————► CW (↷)

Switch position (mode)	LOADING TOP		UNLOAD WAIT		DRUM START		T REEL START		LOADING END
Switch pattern	1	7	5	7	4	7	6	7	3
LOAD SW A	×	×	×	×	○	×	○	×	×
LOAD SW B	○	×	○	×	○	×	×	×	×
LOAD SW C	○	×	×	×	×	×	×	×	○

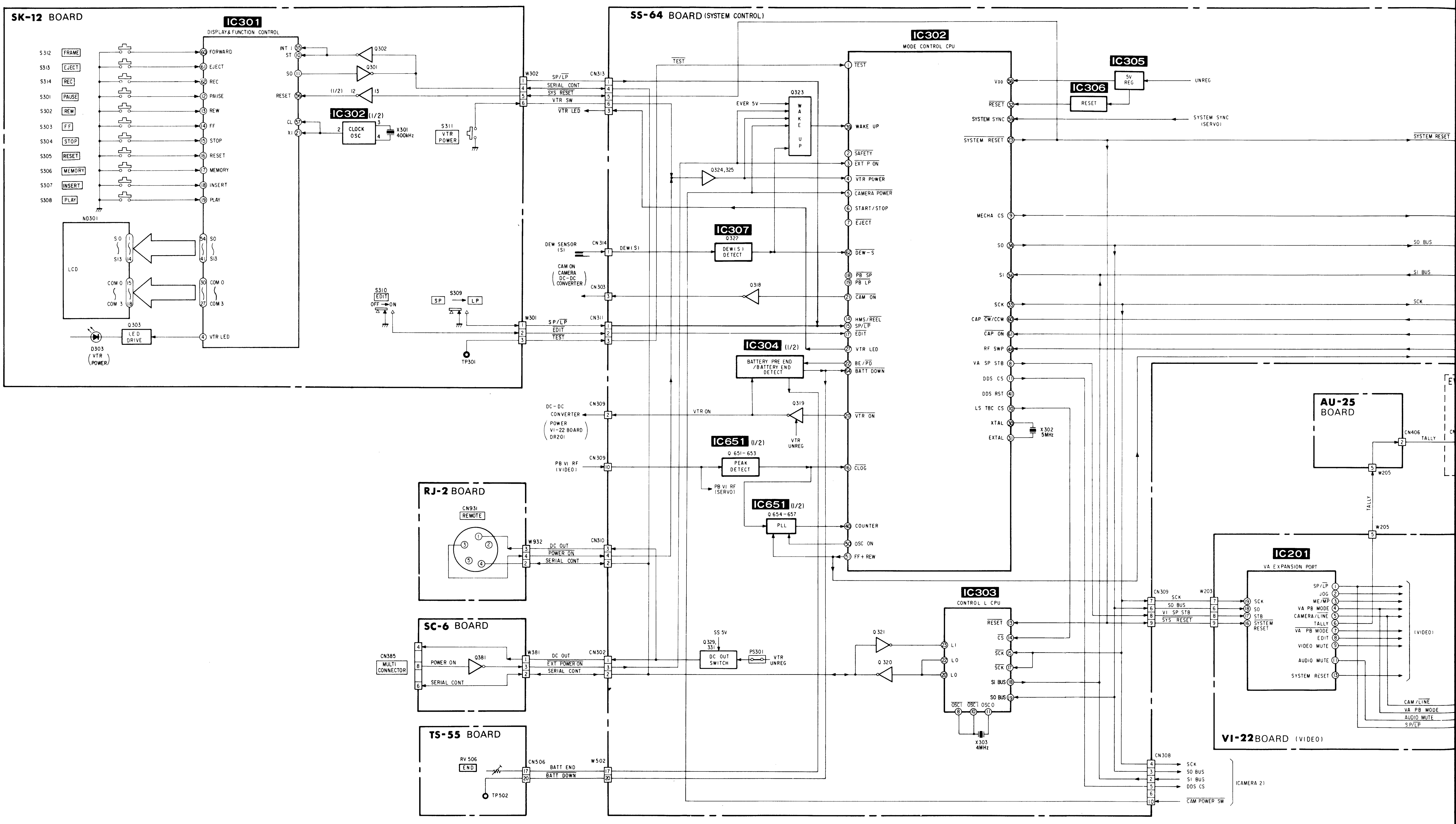
○ . . . Short-circuit
× . . . Open

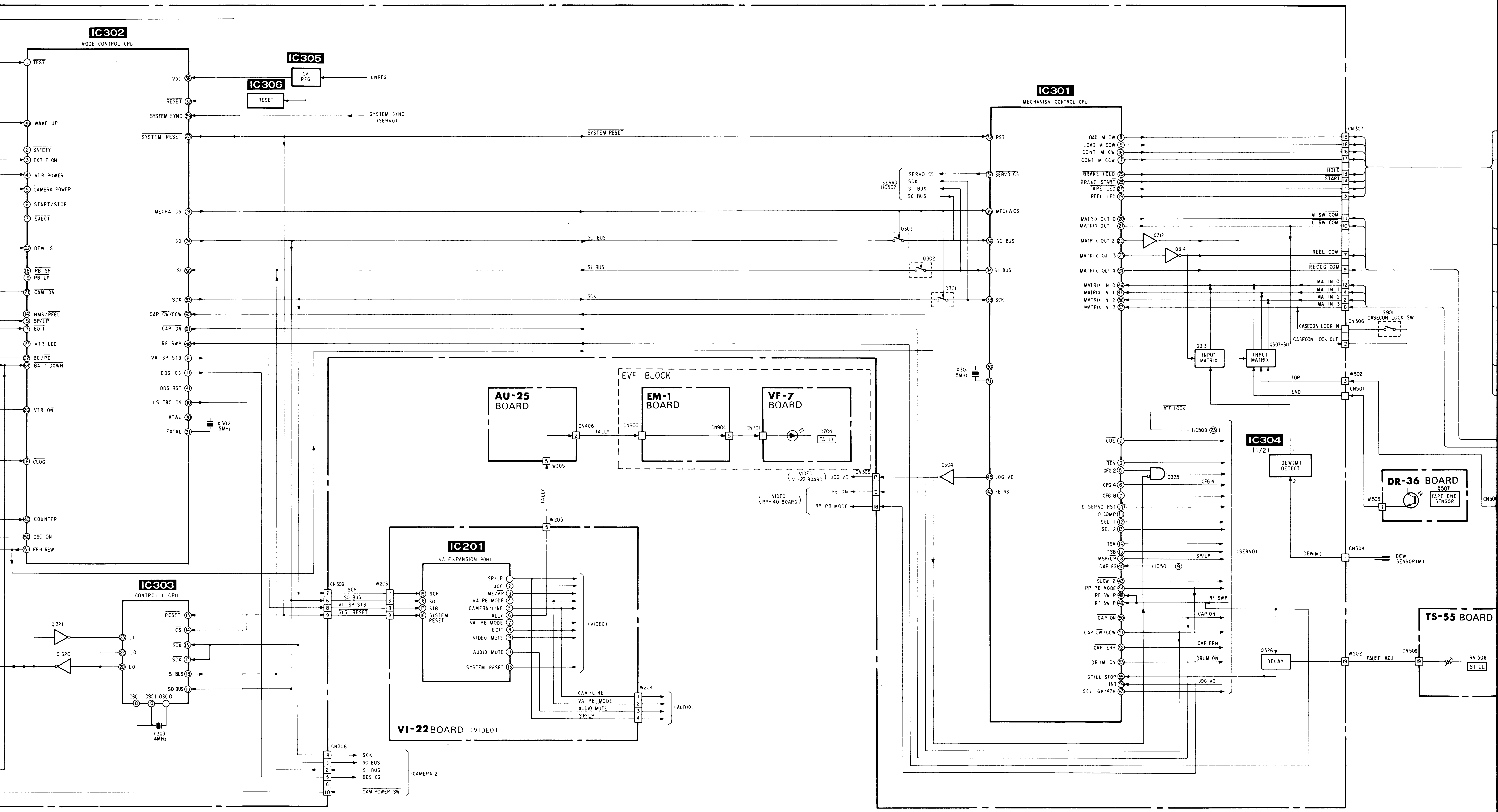
3-21. CAMERA SYSTEM CONTROL CPU (IC601 on FC-10 Board) — PERIPHERAL CIRCUITS INTERFACE

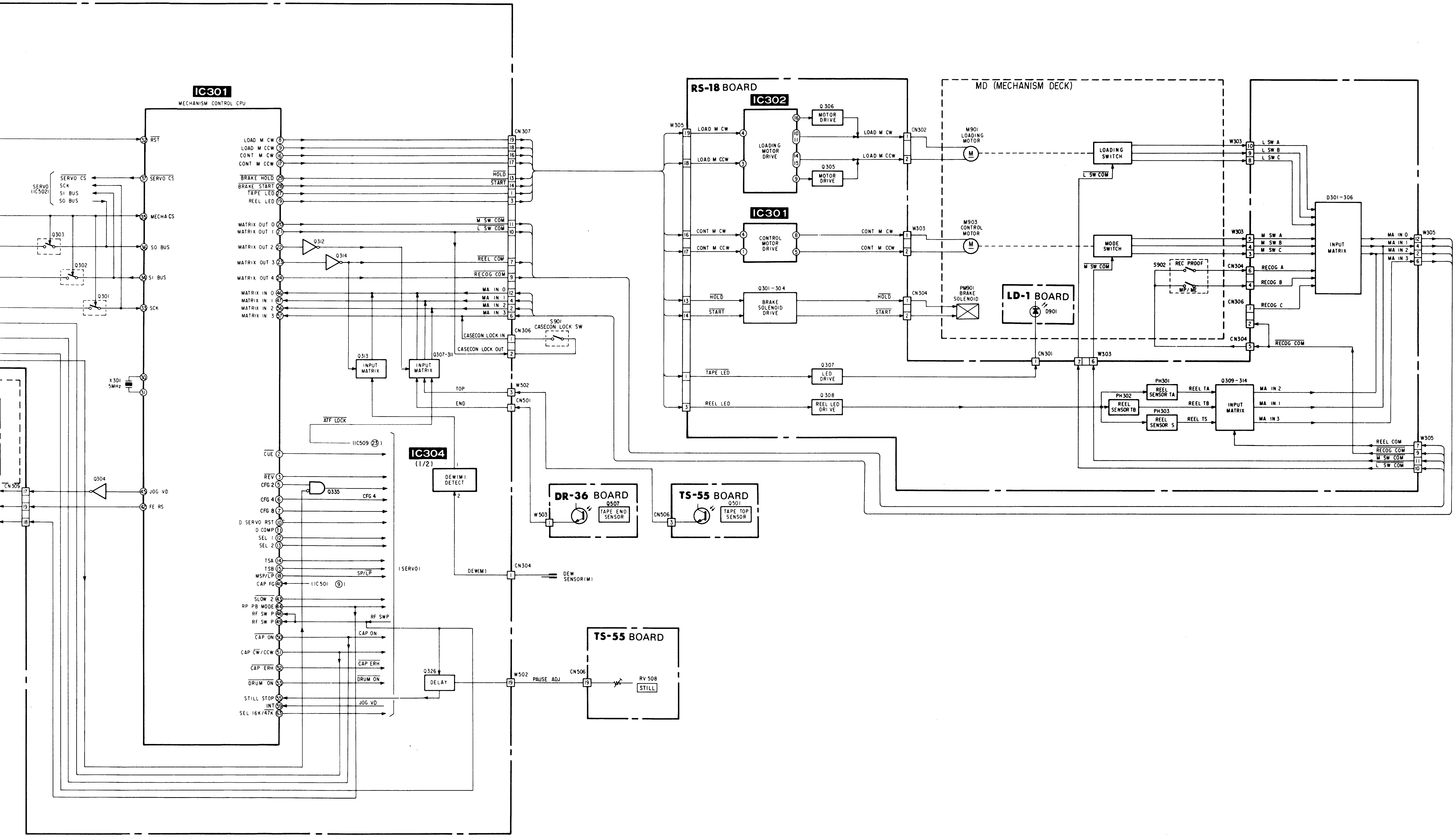
Signal name	I/O	Pin No.	Input/Output level
WR	O	2	"H" when the colour setting of wiper is at white, red, violet or yellow.
RESET	I	3	Normally "L". "H" pulse is input when the lithium battery is mounted or when the power supply turns ON without the lithium battery.
CL1	I	5	System clock oscillation pin (It oscillates continuously during the period the S/S 5V is at ON. Oscillation frequency: Approx. 330kHz) It oscillates approx. 70kHz intermittently every 0.5sec. during the lithium battery is in operation.
CL2	O	9	
DDS CS	I	10	Communication request signal ("H" pulse of V cycle) from mode control CPU (IC302 on SS-64 board)

Signal name	I/O	Pin No.	Input/Output level
POWER DOWN	I	11	"L" when the power supply (S/S 5V) of VTR section is at ON.
$\overline{\text{SCK}}$	I/O	12	Communication serial data transfer clock input/output ("L" pulse train of V cycle) with mode control CPU and character generator (IC675/676 on CG-1 board)
SO	O	15	Serial data output ("H" pulse train of V cycle) to mode control CPU and character generator
SI	I	16	Serial data input ("H" pulse train of V cycle) from mode control CPU
LI DWN	I	17	Detection input of lithium battery down. "H" when battery is down.
$\overline{\text{CAM DWN}}$	I	18	"H" when the power supply (F 5V) of camera section is at ON.
TEST	I	19	Pull-up to "H" level. TEST mode when at "L".
BUS ON	O	20	Communication selection signal of mode control CPU and character generator ("H" level during communication with mode control CPU. Communication cycle is V cycle.)
STB1	O	21	Strobe signal for EVF character generator (IC676 on CG-1 board) ("H" pulse output of 4V cycle)
STB2	O	22	Strobe signal for video output character generator (IC675 on CG-1 board) ("H" pulse output of 4V cycle)
ZOOM TELE	O	23	"H" when the zoom ring is turned to TELE side.
ZOOM WIDE	O	24	"H" when the zoom ring is turned to WIDE side.
$\overline{\text{INT REC LED}}$	O	25	"L" during INTERVAL REC mode.
FD/$\overline{\text{WIPER}}$	O	26	Selection output of fader mode and wiper mode ("H" during fader mode)
MD4	O	28	Key matrix scanning output ("L" pulse of 4V cycles)
MD5	O	30	Key matrix scanning output ("H" pulse of 4V cycles)
X1	I	32	Timer clock oscillating pin (Oscillates regularly when the lithium battery is mounted. Oscillating frequency is approx. 32.8kHz.)
X2	O	34	
$\overline{\text{MD0}}$	O	36	Key matrix scanning output ("L" pulse of 4V cycles)
$\overline{\text{MD1}}$	O	37	
$\overline{\text{MD2}}$	O	38	
$\overline{\text{MD3}}$	O	39	
MI0	I	41	Key matrix scanning input
MI1	I	42	
MI2	I	43	
MI3	I	44	
FD0	O	46	Normally "L" level. "H" pulse output during operating of fader or wiper.
FD1	O	47	
FD2	O	48	
FD3	O	49	
FD4	O	50	
WB	O	51	"H" when the colour setting of wiper is at white, blue, cyan or violet.
WG	O	52	"H" when the colour setting of wiper is at white, green, cyan or yellow.

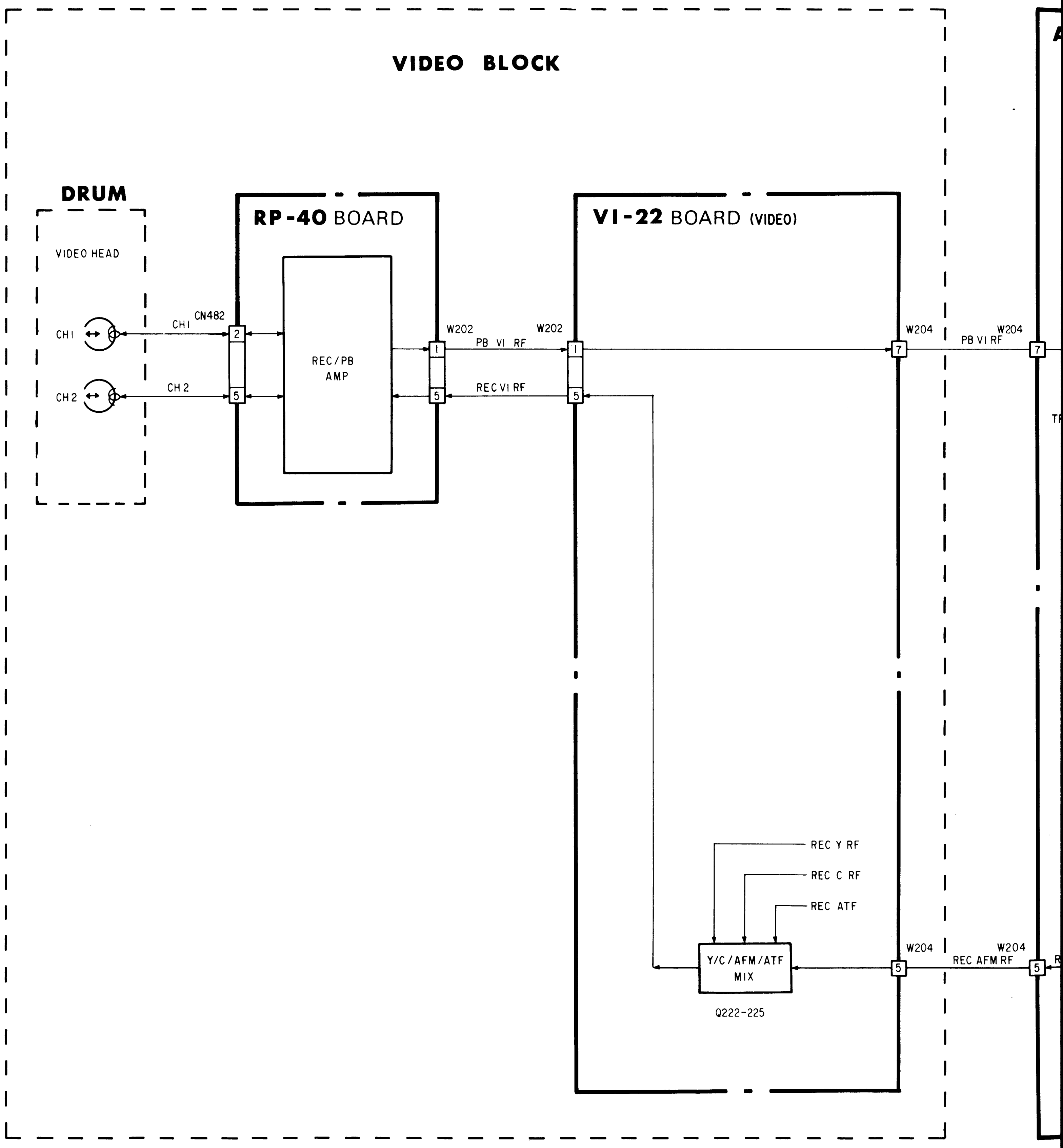
3-22. SYSTEM CONTROL BLOCK DIAGRAM


SK-12 BOARD
IC301
DISPLAY & FUNCTION CONTROL
S312 FRAME
S313 EJECT
S314 REC
S301 PAUSE
S302 REW
S303 FF
S304 STOP
S305 RESET
S306 MEMORY
S307 INSERT
S308 PLAY
60 FORWARD
61 EJECT
62 REC
12 PAUSE
13 REW
14 FF
15 STOP
16 RESET
17 MEMORY
18 INSERT
19 PLAY
ND301
LCD
S0 ~ S13
COM 0 ~ COM 3
54 S0 ~ 41 S13
30 COM 0 ~ 27 COM 3
Q303 LED DRIVE
4 VTR LED
D303 (VTR POWER)
INT 1 55
ST 10
S0 11
RESET 56
CL 57
X1 21
Q302
Q301
(1/2) 12 13
IC302 (1/2)
CLOCK OSC
X301 400kHz
S311 VTR POWER
S310 EDIT OFF → ON
SP S309 → LP
TP301
W302
W301
SP/LP
SERIAL CONT
SYS RESET
VTR SW
VTR LED
EDIT
TEST
SS-64 BOARD (SYSTEM CONTROL)
CN313
CN311
CN314
CN303
CN309
CN310
CN302
W502
DEW SENSOR (S)
DEW(S)
CAM ON (CAMERA DC-DC CONVERTER)
DC-DC CONVERTER (POWER VI-22 BOARD DR201)
VTR ON
PB VI RF (VIDEO)
TEST
EVER 5V
Q323 WAKE UP
Q324,325
IC307 Q322 DEW(S) DETECT
Q318
IC304 (1/2) BATTERY PRE END /BATTERY END DETECT
Q319
VTR UNREG
IC651 (1/2) Q 651-653 PEAK DETECT
PB VI RF (SERVO)
IC651 (1/2) Q 654-657 PLL
IC302
MODE CONTROL CPU
1 TEST
39 WAKE UP
2 SAFETY
3 EXT P ON
4 VTR POWER
5 CAMERA POWER
6 START/STOP
7 EJECT
62 DEW-S
18 PB SP
19 PB LP
21 CAM ON
14 HMS/REEL
15 SP/LP
17 EDIT
27 VTR LED
22 BE/PD
64 BATT DOWN
20 VTR ON
16 CLOG
40 COUNTER
50 OSC ON
51 FF+REW
VDD 58
RESET 32
SYSTEM SYNC 59
SYSTEM RESET 23
MECHA CS 9
S0 34
SI 36
SCK 33
CAP CW/CCW 60
CAP ON 61
RF SWP 48
VA SP STB 8
DDS CS 11
DDS RST 41
LS TBC CS 10
XTAL 30
EXTAL 31
X302 5MHz
IC305 5V REG
IC306 RESET
UNREG
SYSTEM SYNC (SERVO)
SYSTEM RESET
S0 BUS
SI BUS
SCK
RJ-2 BOARD
CN931 REMOTE
W932
DC OUT
POWER ON
SERIAL CONT
SC-6 BOARD
CN385 MULTI CONNECTOR
POWER ON
Q381
SERIAL CONT
W381
DC OUT
EXT POWER ON
SERIAL CONT
SS 5V
Q329, 331 DC OUT SWITCH
PS301
VTR UNREG
TS-55 BOARD
RV 506 END
TP502
CN506
BATT END
BATT DOWN
Q321
Q 320
IC303
CONTROL L CPU
23 LI
22 LO
20 LO
RESET 13
CS 14
SCK 15
SCK 17
SI BUS 18
SO BUS 19
OSCI 8
OSCI 10
OSCO 11
X303 4MHz
CN309
W203
SCK
S0 BUS
VI SP STB
SYS RESET
CN308
SCK
S0 BUS
SI BUS
DDS CS
CAM POWER SW
(CAMERA 2)
AU-25 BOARD
CN406
TALLY
W205
IC201
VA EXPANSION PORT
19 SCK
18 S0
17 STB
16 SYSTEM RESET
SP/LP 1
JOG 2
ME/MP 3
VA PB MODE 4
CAMERA/LINE 5
TALLY 6
VA PB MODE 7
EDIT 8
VIDEO MUTE 9
AUDIO MUTE 11
SYSTEM RESET 13
(VIDEO)
CAM/LINE
VA PB MODE
AUDIO MUTE
SP/LP
VI-22 BOARD (VIDEO)


IC302
MODE CONTROL CPU
TEST
WAKE UP
SAFETY
EXT P ON
VTR POWER
CAMERA POWER
START/STOP
EJECT
DEW-S
PB SP
PB LP
CAM ON
HMS/REEL
SP/LP
EDIT
VTR LED
BE/PD
BATT DOWN
VTR ON
CLOG
COUNTER
OSC ON
FF+REW
Vᴅᴅ
RESET
SYSTEM SYNC
SYSTEM RESET
MECHA CS
SO
SI
SCK
CAP CW/CCW
CAP ON
RF SWP
VA SP STB
DDS CS
DDS RST
LS TBC CS
XTAL
EXTAL
X302 5MHz
IC305
5V REG
UNREG
IC306
RESET
SYSTEM SYNC (SERVO)
SO BUS
SI BUS
IC303
CONTROL L CPU
Q321
Q320
LI
LO
X303 4MHz
OSCI
OSCO
SI BUS
SO BUS
CN309
W203
SYS RESET
VI SP STB
IC201
VA EXPANSION PORT
SCK
STB
SYSTEM RESET
SP/LP
JOG
ME/MP
VA PB MODE
CAMERA/LINE
TALLY
EDIT
VIDEO MUTE
AUDIO MUTE
(VIDEO)
W204
CAM/LINE
(AUDIO)
VI-22 BOARD (VIDEO)
CN308
CAM POWER SW
(CAMERA 2)
AU-25 BOARD
CN406
W205
EVF BLOCK
EM-1 BOARD
CN906
CN904
VF-7 BOARD
CN701
D704
TALLY
CN305
(VIDEO VI-22 BOARD)
JOG VD
FE ON
(VIDEO RP-40 BOARD)
RP PB MODE
Q304
SERVO (IC502)
SERVO CS
Q303
Q302
Q301
X301 5MHz
IC301
MECHANISM CONTROL CPU
RST
MECHA CS
FE RS
LOAD M CW
LOAD M CCW
CONT M CW
CONT M CCW
BRAKE HOLD
BRAKE START
TAPE LED
REEL LED
MATRIX OUT 0
MATRIX OUT 1
MATRIX OUT 2
MATRIX OUT 3
MATRIX OUT 4
MATRIX IN 0
MATRIX IN 1
MATRIX IN 2
MATRIX IN 3
Q312
Q314
Q313
INPUT MATRIX
Q307-311
ATF LOCK
(IC509 ㉓)
CUE
REV
CFG 2
CFG 4
CFG 8
Q335
D SERVO RST
D COMP
SEL 1
SEL 2
TSA
TSB
MSP/LP
CAP FG
(IC501 ⑨)
SLOW 2
RP PB MODE
RF SW P
CAP ERH
DRUM ON
STILL STOP
INT
SEL 16K/47K
(SERVO)
Q326
DELAY
IC304 (1/2)
DEW(M) DETECT
DEW(M)
CN304
DEW SENSOR(M)
CN307
HOLD
START
M SW COM
L SW COM
REEL COM
RECOG COM
MA IN 0
MA IN 1
MA IN 2
MA IN 3
CN306
S901
CASECON LOCK SW
CASECON LOCK IN
CASECON LOCK OUT
W502
TOP
END
CN501
DR-36 BOARD
Q507
TAPE END SENSOR
W503
CN506
TS-55 BOARD
PAUSE ADJ
RV 508
STILL

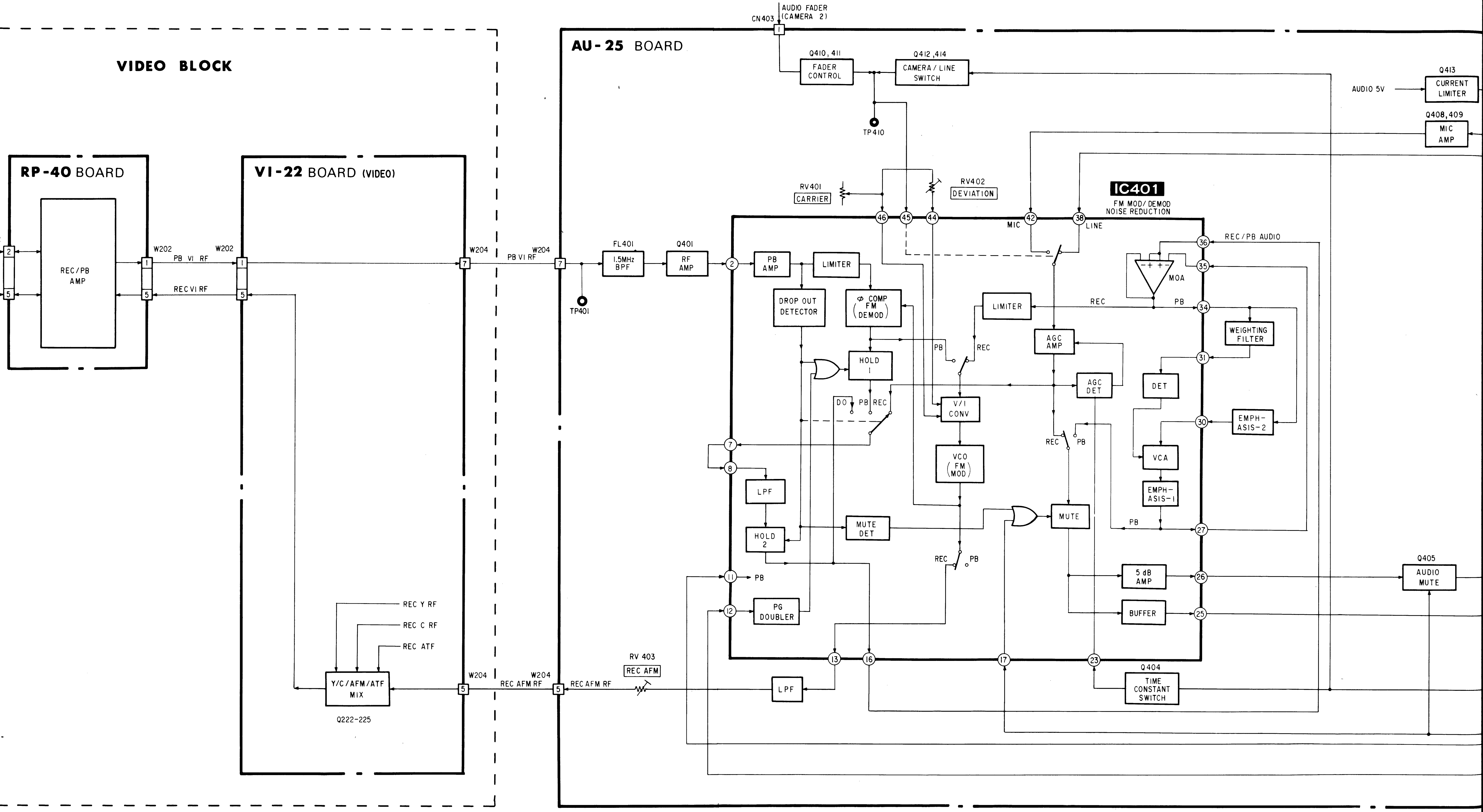

IC301
MECHANISM CONTROL CPU
RST
SERVO CS
SCK
SI BUS
SO BUS
SERVO (IC502)
MECHA CS
SO BUS
SI BUS
SCK
Q303
Q302
Q301
X301 5MHz
JOG VD
FE RS
Q304
CN305
LOAD M CW
LOAD M CCW
CONT M CW
CONT M CCW
BRAKE HOLD
BRAKE START
TAPE LED
REEL LED
MATRIX OUT 0
MATRIX OUT 1
MATRIX OUT 2
MATRIX OUT 3
MATRIX OUT 4
MATRIX IN 0
MATRIX IN 1
MATRIX IN 2
MATRIX IN 3
Q312
Q314
Q313
INPUT MATRIX
Q307-311
INPUT MATRIX
CN307
HOLD
START
M SW COM
L SW COM
REEL COM
RECOG COM
MA IN 0
MA IN 1
MA IN 2
MA IN 3
CN306
CASECON LOCK IN
CASECON LOCK OUT
S901
CASECON LOCK SW
W502
TOP
CN501
END
ATF LOCK
(IC509 ㉓)
CUE
REV
CFG 2
Q335
CFG 4
CFG 8
D SERVO RST
D COMP
SEL 1
SEL 2
TSA
TSB
MSP/LP
CAP FG
(IC501 ⑨)
SP/LP
(SERVO)
SLOW 2
RP PB MODE
RF SW P
RF SW P
RF SWP
CAP ON
CAP CW/CCW
CAP ERH
DRUM ON
STILL STOP
JOG VD
INT
SEL 16K/47K
IC304
(1/2)
DEW(M) DETECT
DEW(M)
CN304
DEW SENSOR(M)
Q326
DELAY
W502
PAUSE ADJ
CN506
TS-55 BOARD
RV508
STILL
DR-36 BOARD
Q507
TAPE END SENSOR
W503
TS-55 BOARD
Q501
TAPE TOP SENSOR
CN506
RS-18 BOARD
W305
IC302
LOADING MOTOR DRIVE
Q306
MOTOR DRIVE
Q305
MOTOR DRIVE
LOAD M CW
LOAD M CCW
CN302
IC301
CONTROL MOTOR DRIVE
CONT M CW
CONT M CCW
W303
Q301-304
BRAKE SOLENOID DRIVE
HOLD
START
CN304
Q307
LED DRIVE
TAPE LED
Q308
REEL LED DRIVE
REEL LED
MD (MECHANISM DECK)
M901
LOADING MOTOR
M903
CONTROL MOTOR
PM901
BRAKE SOLENOID
LD-1 BOARD
D901
CN301
LOADING SWITCH
L SW COM
MODE SWITCH
M SW COM
S902
REC PROOF
MP/ME
W303
L SW A
L SW B
L SW C
M SW A
M SW B
M SW C
CN304
RECOG A
RECOG B
CN306
RECOG C
RECOG COM
Q301-306
INPUT MATRIX
MA IN 0
MA IN 1
MA IN 2
MA IN 3
W305
PH301
REEL SENSOR TA
PH302
REEL SENSOR TB
PH303
REEL SENSOR S
REEL TA
REEL TB
REEL TS
Q309-314
INPUT MATRIX
MA IN 2
MA IN 1
MA IN 3
REEL COM
RECOG COM
M SW COM
L SW COM

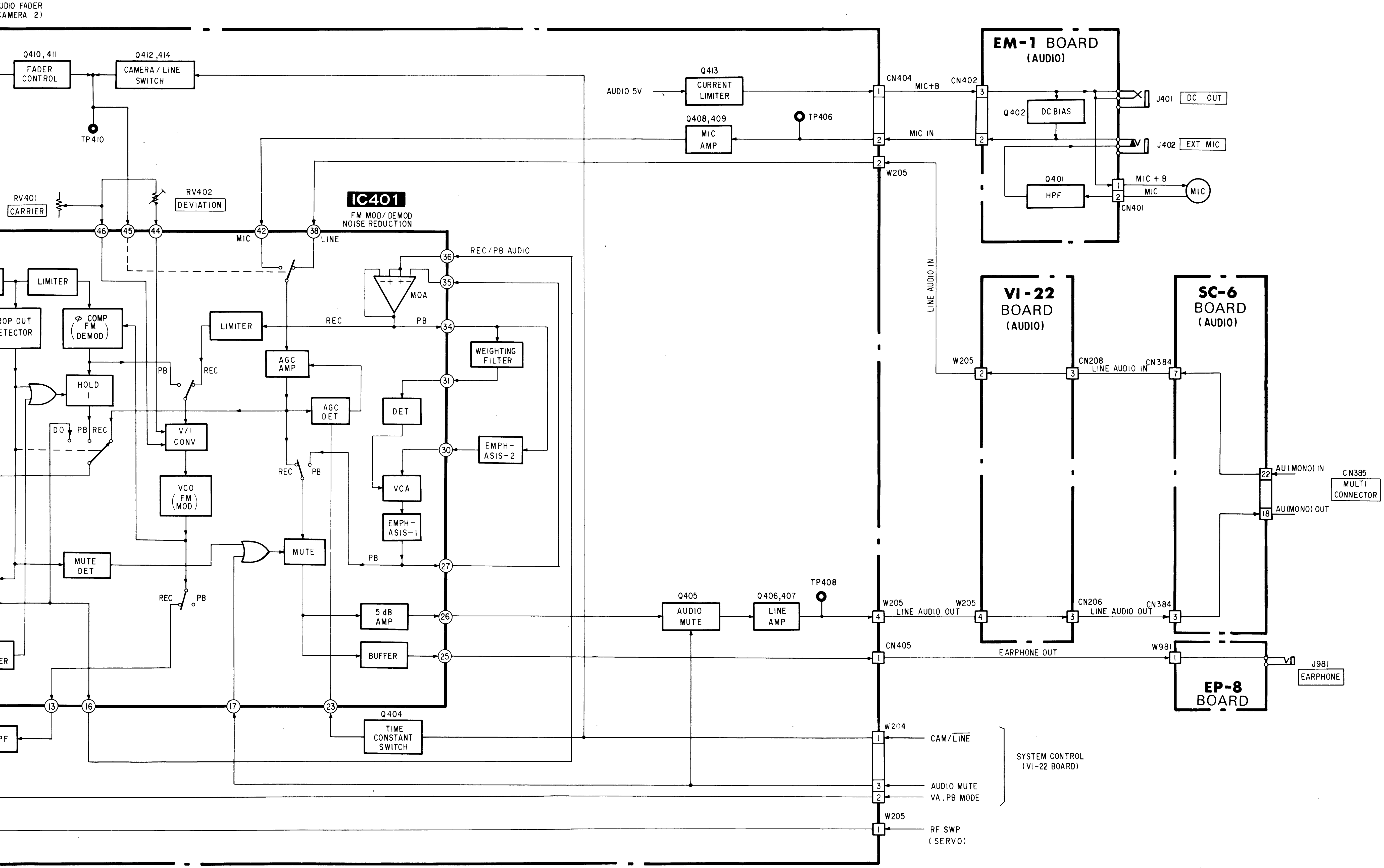
3-23. AUDIO BLOCK DIAGRAM



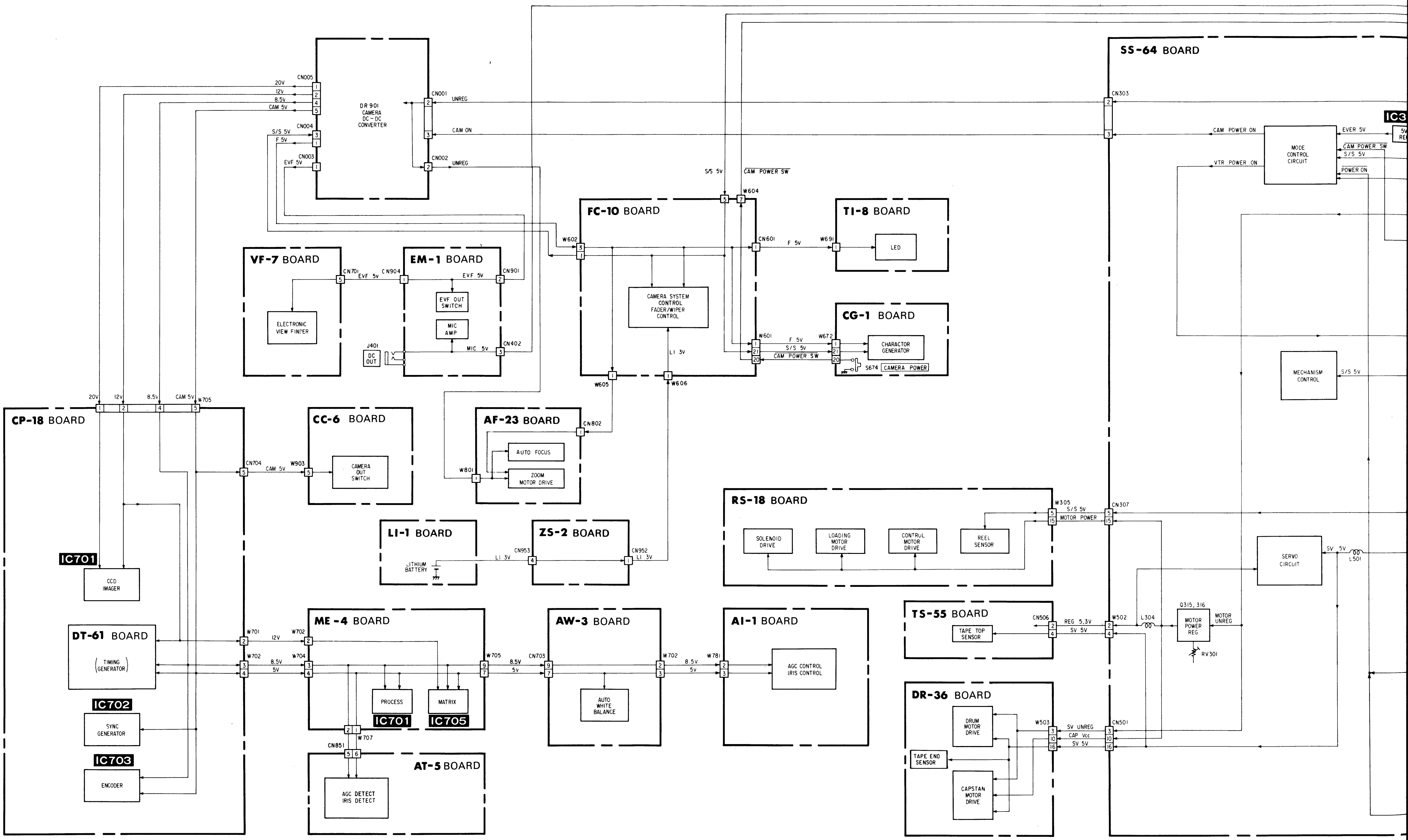
VIDEO BLOCK
DRUM
VIDEO HEAD
CH1
CH2
CH1
CN482
CH2
2
5
RP-40 BOARD
REC/PB
AMP
W202
W202
PB VI RF
REC VI RF
1
5
1
5
VI-22 BOARD (VIDEO)
W204
PB VI RF
W204
7
7
REC Y RF
REC C RF
REC ATF
Y/C/AFM/ATF
MIX
Q222-225
W204
W204
REC AFM RF
5
5

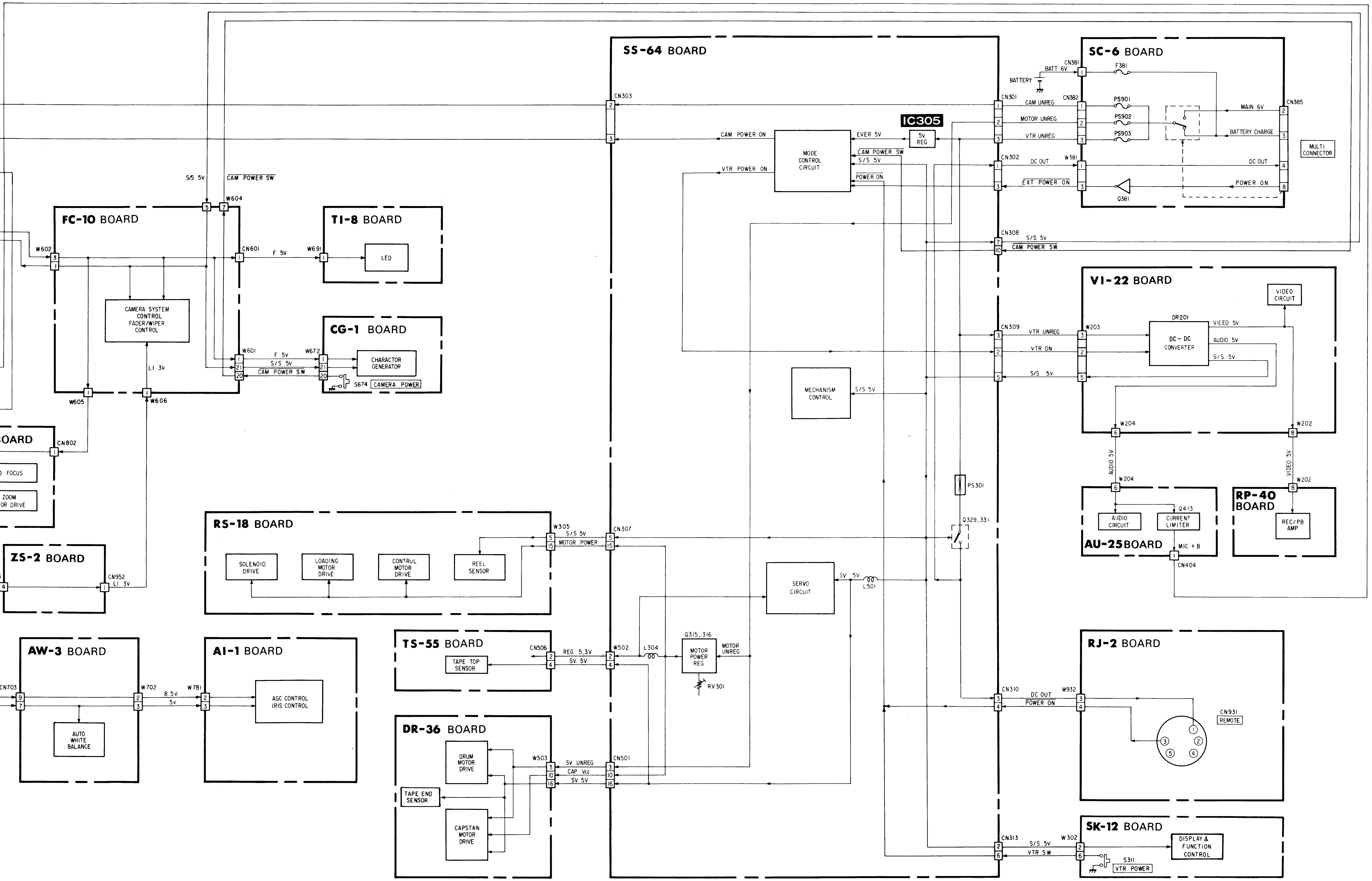
96


VIDEO BLOCK
RP-40 BOARD
REC/PB AMP
2
5
W202
PB VI RF
REC VI RF
VI-22 BOARD (VIDEO)
W204
1
7
REC Y RF
REC C RF
REC ATF
Y/C/AFM/ATF MIX
Q222-225
REC AFM RF
AU-25 BOARD
CN403
AUDIO FADER (CAMERA 2)
Q410, 411
FADER CONTROL
Q412, 414
CAMERA / LINE SWITCH
TP410
Q413
CURRENT LIMITER
AUDIO 5V
Q408, 409
MIC AMP
RV401
CARRIER
RV402
DEVIATION
IC401
FM MOD/DEMOD NOISE REDUCTION
MIC
LINE
46
45
44
42
38
FL401
1.5MHz BPF
Q401
RF AMP
TP401
PB AMP
LIMITER
DROP OUT DETECTOR
Φ COMP (FM DEMOD)
HOLD 1
DO
PB
REC
LIMITER
AGC AMP
AGC DET
V/I CONV
VCO (FM MOD)
REC/PB AUDIO
36
35
MOA
34
WEIGHTING FILTER
31
DET
30
EMPH-ASIS-2
VCA
EMPH-ASIS-1
27
LPF
HOLD 2
MUTE DET
MUTE
5 dB AMP
26
BUFFER
25
PG DOUBLER
2
7
8
11
12
13
16
17
23
Q404
TIME CONSTANT SWITCH
Q405
AUDIO MUTE
RV 403
REC AFM
LPF

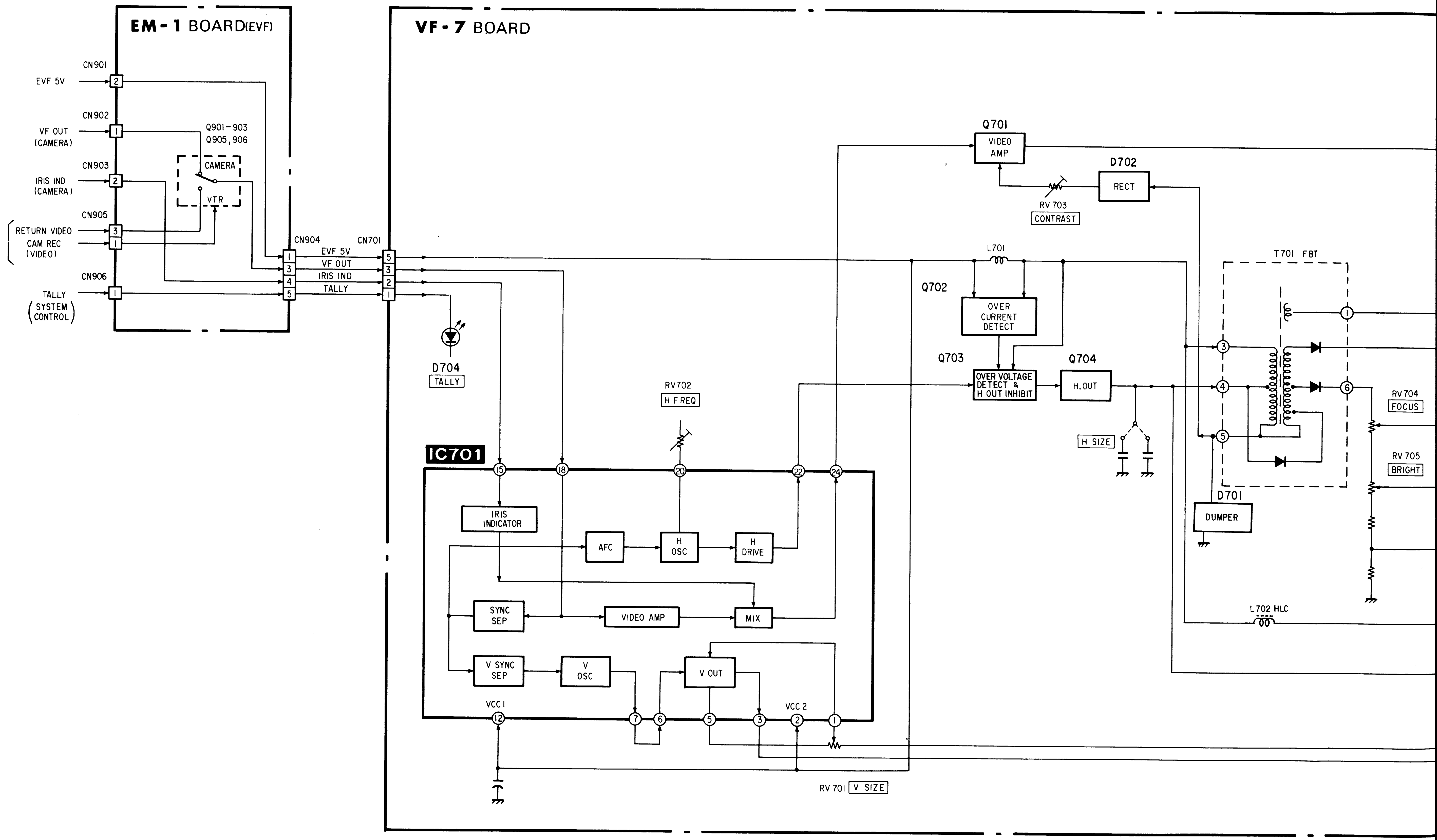

UDIO FADER
CAMERA 2)
Q410, 411
FADER CONTROL
Q412, 414
CAMERA / LINE SWITCH
TP410
RV401
CARRIER
RV402
DEVIATION
IC401
FM MOD/DEMOD NOISE REDUCTION
46
45
44
MIC
42
38
LINE
36
REC/PB AUDIO
35
MOA
LIMITER
ROP OUT ETECTOR
φ COMP (FM DEMOD)
LIMITER
REC
PB
34
AGC AMP
WEIGHTING FILTER
HOLD I
PB
REC
31
AGC DET
DET
DO
PB
REC
V/I CONV
30
EMPH-ASIS-2
REC
PB
VCO (FM MOD)
VCA
EMPH-ASIS-1
MUTE DET
MUTE
PB
27
REC
PB
5 dB AMP
26
ER
BUFFER
25
13
16
17
23
Q404
TIME CONSTANT SWITCH
PF
Q413
AUDIO 5V
CURRENT LIMITER
Q408, 409
MIC AMP
TP406
Q405
AUDIO MUTE
Q406, 407
LINE AMP
TP408
CN404
MIC+B
MIC IN
W205
LINE AUDIO IN
W205
LINE AUDIO OUT
CN405
W204
CAM/LINE
AUDIO MUTE
VA.PB MODE
SYSTEM CONTROL (VI-22 BOARD)
W205
RF SWP (SERVO)
EM-1 BOARD (AUDIO)
CN402
Q402
DC BIAS
Q401
HPF
CN401
MIC + B
MIC
J401
DC OUT
J402
EXT MIC
VI-22 BOARD (AUDIO)
W205
CN208
LINE AUDIO IN
W205
CN206
LINE AUDIO OUT
SC-6 BOARD (AUDIO)
CN384
CN384
AU(MONO) IN
AU(MONO) OUT
CN385
MULTI CONNECTOR
EARPHONE OUT
W981
J981
EARPHONE
EP-8 BOARD

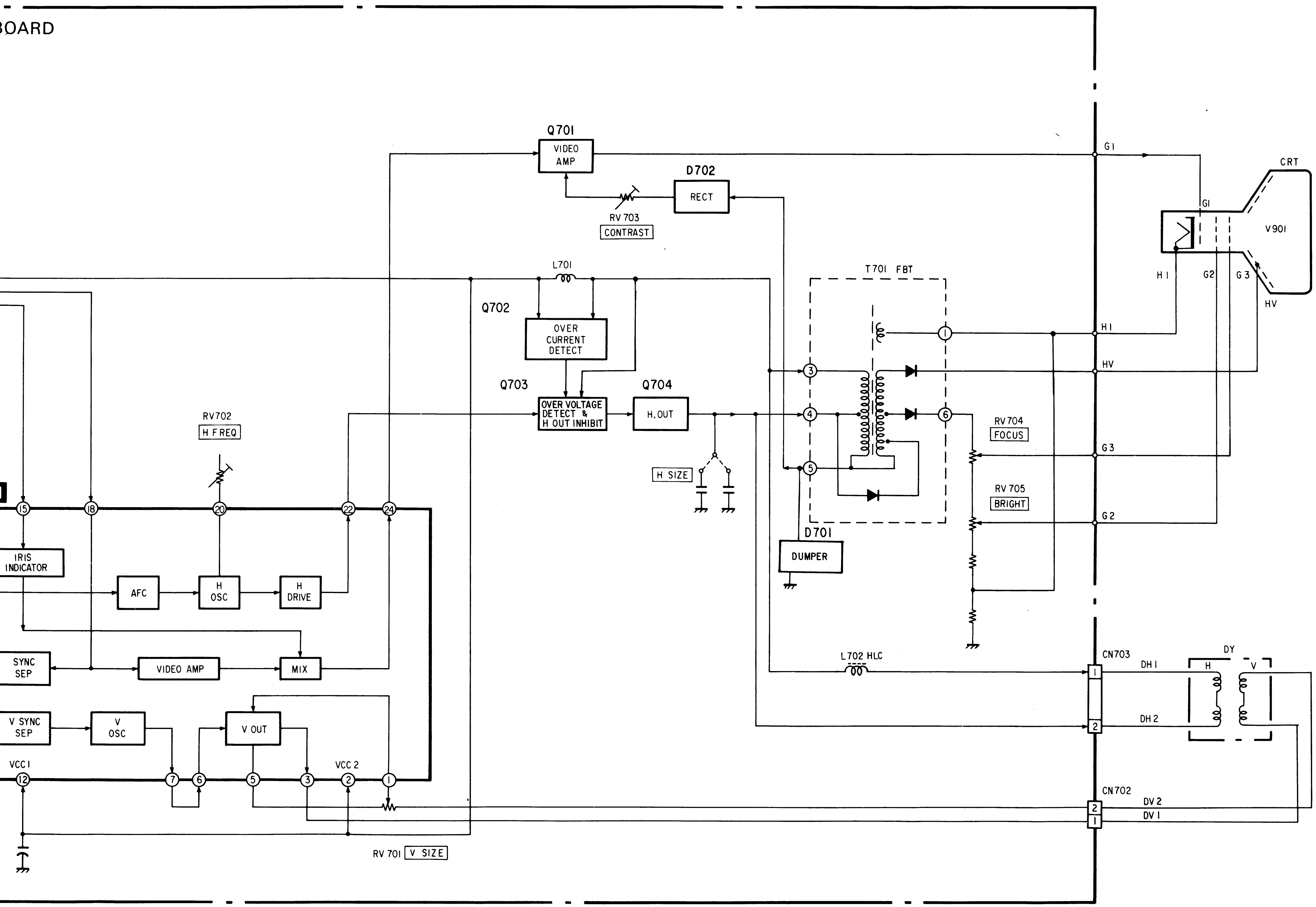
3-24. POWER BLOCK DIAGRAM


DR901 CAMERA DC-DC CONVERTER
CN005
20V
12V
8.5V
CAM 5V
CN004
S/S 5V
F 5V
CN003
EVF 5V
CN001
UNREG
CAM ON
CN002
UNREG
VF-7 BOARD
ELECTRONIC VIEW FINDER
CN701
EVF 5V
CN904
EM-1 BOARD
EVF 5V
CN901
EVF OUT SWITCH
MIC AMP
CN402
MIC 5V
J401
DC OUT
FC-10 BOARD
W602
CAMERA SYSTEM CONTROL FADER/WIPER CONTROL
LI 3V
W605
W606
S/S 5V
CAM POWER SW
W604
CN601
F 5V
W691
TI-8 BOARD
LED
W601
F 5V
S/S 5V
CAM POWER SW
W672
CG-1 BOARD
CHARACTOR GENERATOR
S674
CAMERA POWER
SS-64 BOARD
CN303
CAM POWER ON
VTR POWER ON
MODE CONTROL CIRCUIT
EVER 5V
CAM POWER SW
S/S 5V
POWER ON
IC3
MECHANISM CONTROL
S/S 5V
CP-18 BOARD
20V
12V
8.5V
CAM 5V
W705
IC701
CCD IMAGER
DT-61 BOARD
TIMING GENERATOR
IC702
SYNC GENERATOR
IC703
ENCODER
CN704
CAM 5V
W903
CC-6 BOARD
CAMERA OUT SWITCH
AF-23 BOARD
CN802
AUTO FOCUS
ZOOM MOTOR DRIVE
W801
LI-1 BOARD
LITHIUM BATTERY
LI 3V
CN953
ZS-2 BOARD
CN952
LI 3V
W701
12V
W702
W702
8.5V
5V
W704
ME-4 BOARD
PROCESS
IC701
MATRIX
IC705
W705
8.5V
5V
CN703
W707
CN851
AT-5 BOARD
AGC DETECT IRIS DETECT
AW-3 BOARD
AUTO WHITE BALANCE
W702
8.5V
5V
W781
AI-1 BOARD
AGC CONTROL IRIS CONTROL
RS-18 BOARD
SOLENOID DRIVE
LOADING MOTOR DRIVE
CONTROL MOTOR DRIVE
REEL SENSOR
W305
S/S 5V
MOTOR POWER
CN307
SERVO CIRCUIT
5V
5V
L501
TS-55 BOARD
TAPE TOP SENSOR
CN506
REG 5.3V
5V 5V
W502
L304
Q315, 316
MOTOR POWER REG
MOTOR UNREG
RV301
DR-36 BOARD
DRUM MOTOR DRIVE
TAPE END SENSOR
CAPSTAN MOTOR DRIVE
W503
SV UNREG
CAP Vcc
SV 5V
CN501


SS-64 BOARD
SC-6 BOARD
FC-10 BOARD
TI-8 BOARD
CG-1 BOARD
RS-18 BOARD
TS-55 BOARD
DR-36 BOARD
AW-3 BOARD
AI-1 BOARD
ZS-2 BOARD
VI-22 BOARD
AU-25 BOARD
RP-40 BOARD
RJ-2 BOARD
SK-12 BOARD
IC305
5V REG
MODE CONTROL CIRCUIT
MECHANISM CONTROL
SERVO CIRCUIT
MOTOR POWER REG
Q315, 316
RV301
L304
L501
PS301
Q329, 331
CAMERA SYSTEM CONTROL FADER/WIPER CONTROL
LED
CHARACTOR GENERATOR
S674
CAMERA POWER
SOLENOID DRIVE
LOADING MOTOR DRIVE
CONTROL MOTOR DRIVE
REEL SENSOR
TAPE TOP SENSOR
DRUM MOTOR DRIVE
CAPSTAN MOTOR DRIVE
TAPE END SENSOR
AUTO WHITE BALANCE
AGC CONTROL IRIS CONTROL
BATTERY
BATT 6V
F381
PS901
PS902
PS903
Q381
MAIN 6V
BATTERY CHARGE
DC OUT
POWER ON
MULTI CONNECTOR
CAM UNREG
MOTOR UNREG
VTR UNREG
EXT POWER ON
CAM POWER ON
VTR POWER ON
EVER 5V
CAM POWER SW
S/S 5V
F 5V
LI 3V
8.5V
5V
REG 5.3V
SV 5V
SV UNREG
CAP Vcc
MOTOR POWER
VTR ON
DR201
DC-DC CONVERTER
VIDEO 5V
AUDIO 5V
VIDEO CIRCUIT
AUDIO CIRCUIT
CURRENT LIMITER
Q413
MIC +B
REC/PB AMP
CN931
REMOTE
VTR SW
S311
VTR POWER
DISPLAY & FUNCTION CONTROL
FOCUS
ZOOM
OR DRIVE
CN301
CN302
CN303
CN307
CN308
CN309
CN310
CN313
CN381
CN382
CN385
CN404
CN501
CN506
CN601
CN703
CN802
CN952
W202
W203
W204
W302
W305
W381
W502
W503
W601
W602
W604
W605
W606
W672
W691
W702
W781
W932

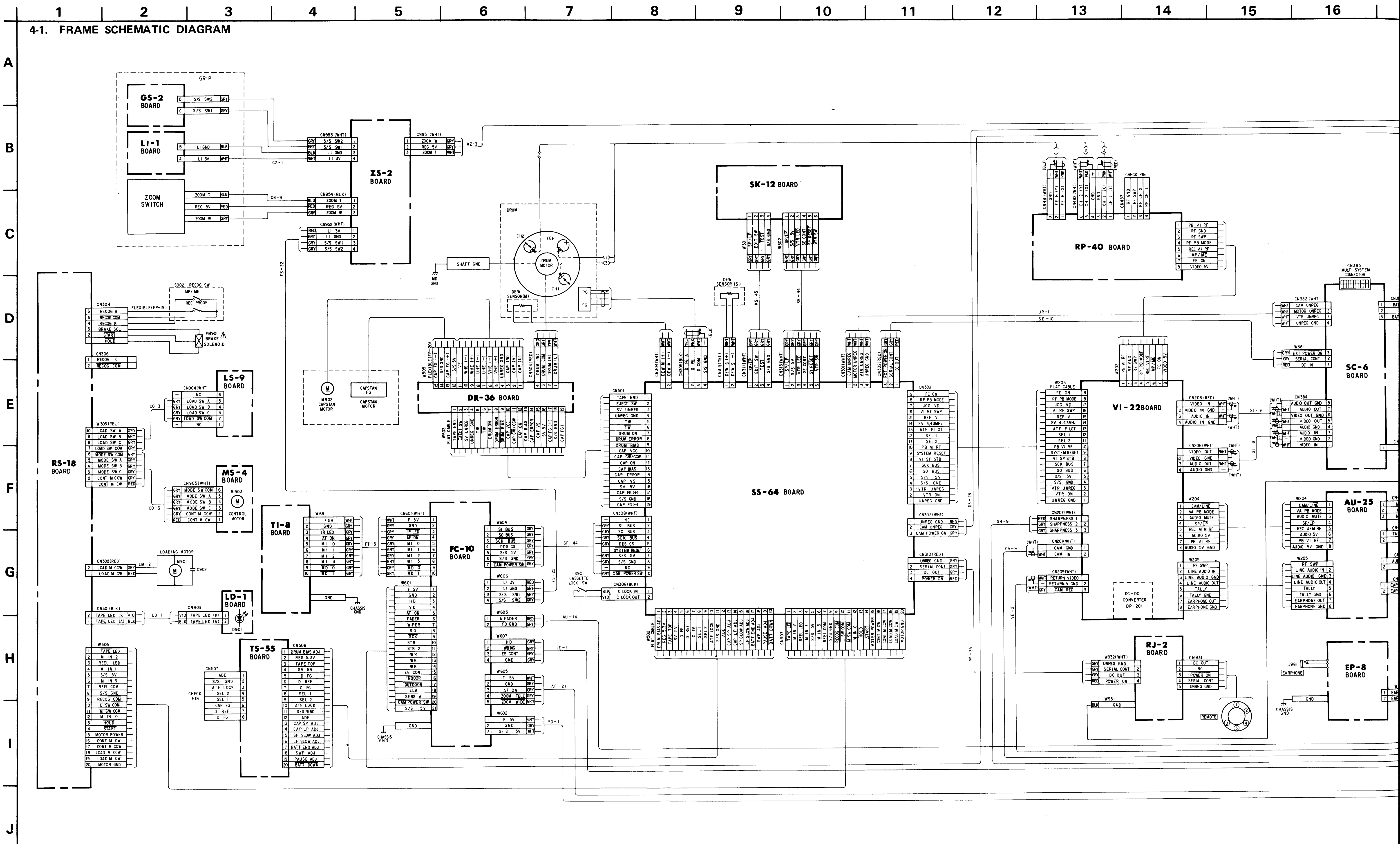
3-25. ELECTRONIC VIEW FINDER BLOCK DIAGRAM

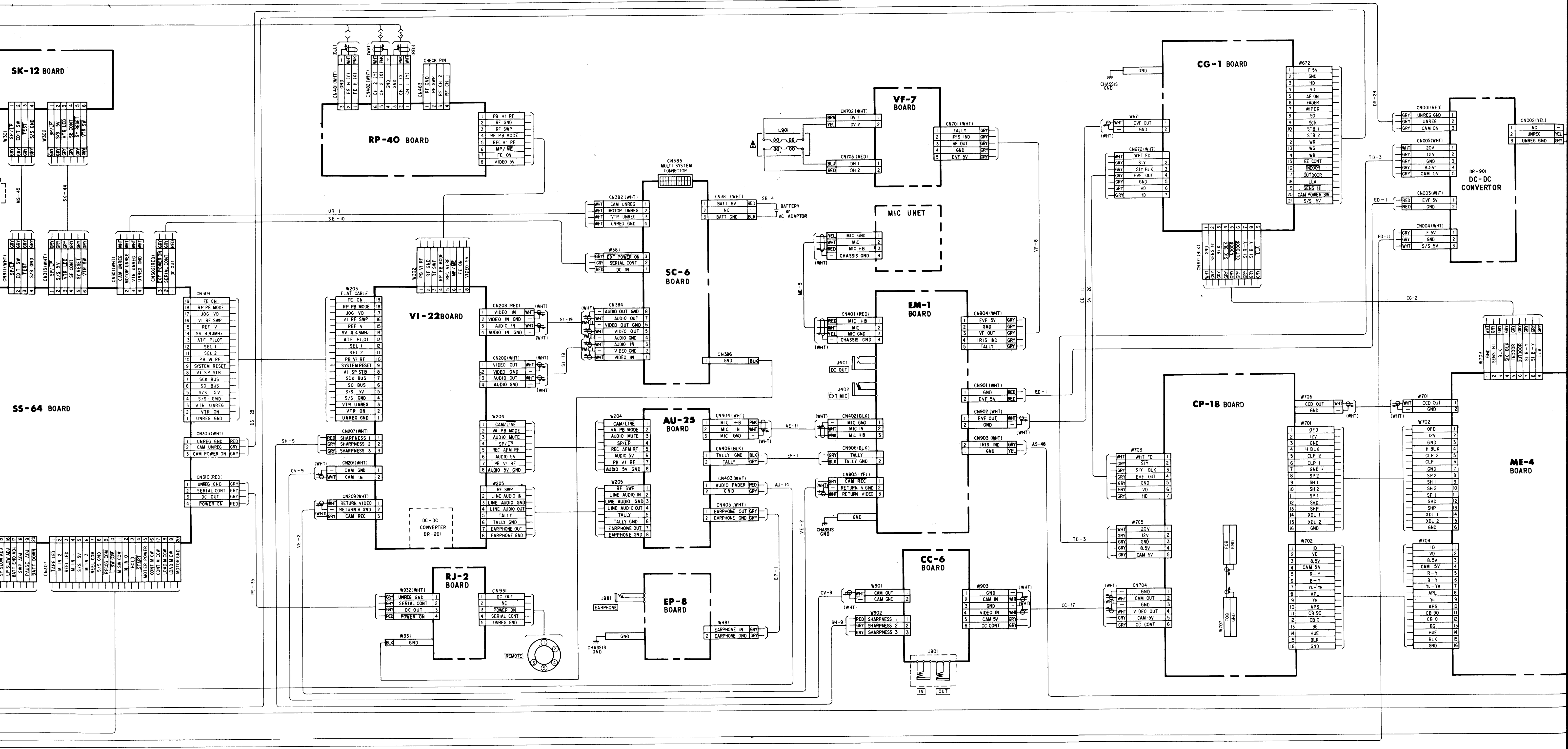

EM-1 BOARD(EVF)
VF-7 BOARD
CN901
EVF 5V
CN902
VF OUT (CAMERA)
Q901-903
Q905, 906
CN903
IRIS IND (CAMERA)
CAMERA
VTR
CN905
RETURN VIDEO
CAM REC (VIDEO)
CN906
TALLY (SYSTEM CONTROL)
CN904
CN701
EVF 5V
VF OUT
IRIS IND
TALLY
D704
TALLY
Q701
VIDEO AMP
D702
RECT
RV 703
CONTRAST
L701
Q702
OVER CURRENT DETECT
Q703
OVER VOLTAGE DETECT & H OUT INHIBIT
Q704
H.OUT
H SIZE
T701 FBT
RV704
FOCUS
RV 705
BRIGHT
D701
DUMPER
L702 HLC
RV702
H FREQ
IC701
IRIS INDICATOR
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP
MIX
V SYNC SEP
V OSC
V OUT
VCC 1
VCC 2
RV 701
V SIZE


BOARD
Q701
VIDEO AMP
D702
RECT
RV 703
CONTRAST
CRT
G1
V901
H1
G2
G3
HV
L701
Q702
OVER CURRENT DETECT
Q703
OVER VOLTAGE DETECT & H OUT INHIBIT
Q704
H.OUT
H SIZE
T701 FBT
1
3
4
5
6
RV704
FOCUS
RV 705
BRIGHT
D701
DUMPER
RV702
H FREQ
15
18
20
22
24
IRIS INDICATOR
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP
MIX
V SYNC SEP
V OSC
V OUT
VCC 1
12
7
6
5
3
VCC 2
2
1
RV 701
V SIZE
L702 HLC
CN703
DH 1
DH 2
DY
H
V
CN702
DV 2
DV 1

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
GRIP
GS-2 BOARD
LI-1 BOARD
ZOOM SWITCH
ZS-2 BOARD
DRUM
DRUM MOTOR
SK-12 BOARD
RP-40 BOARD
CN385 MULTI SYSTEM CONNECTOR
SC-6 BOARD
RS-18 BOARD
S902 RECOG SW
PM901 BRAKE SOLENOID
LS-9 BOARD
MS-4 BOARD
M903 CONTROL MOTOR
M902 CAPSTAN MOTOR
CAPSTAN MOTOR
DR-36 BOARD
SS-64 BOARD
VI-22 BOARD
AU-25 BOARD
TI-8 BOARD
FC-10 BOARD
LOADING MOTOR
M901
LD-1 BOARD
D901
TS-55 BOARD
S901 CASSETTE LOCK SW
DC-DC CONVERTER DR-201
RJ-2 BOARD
EP-8 BOARD
J981 EARPHONE
REMOTE
CHASSIS GND

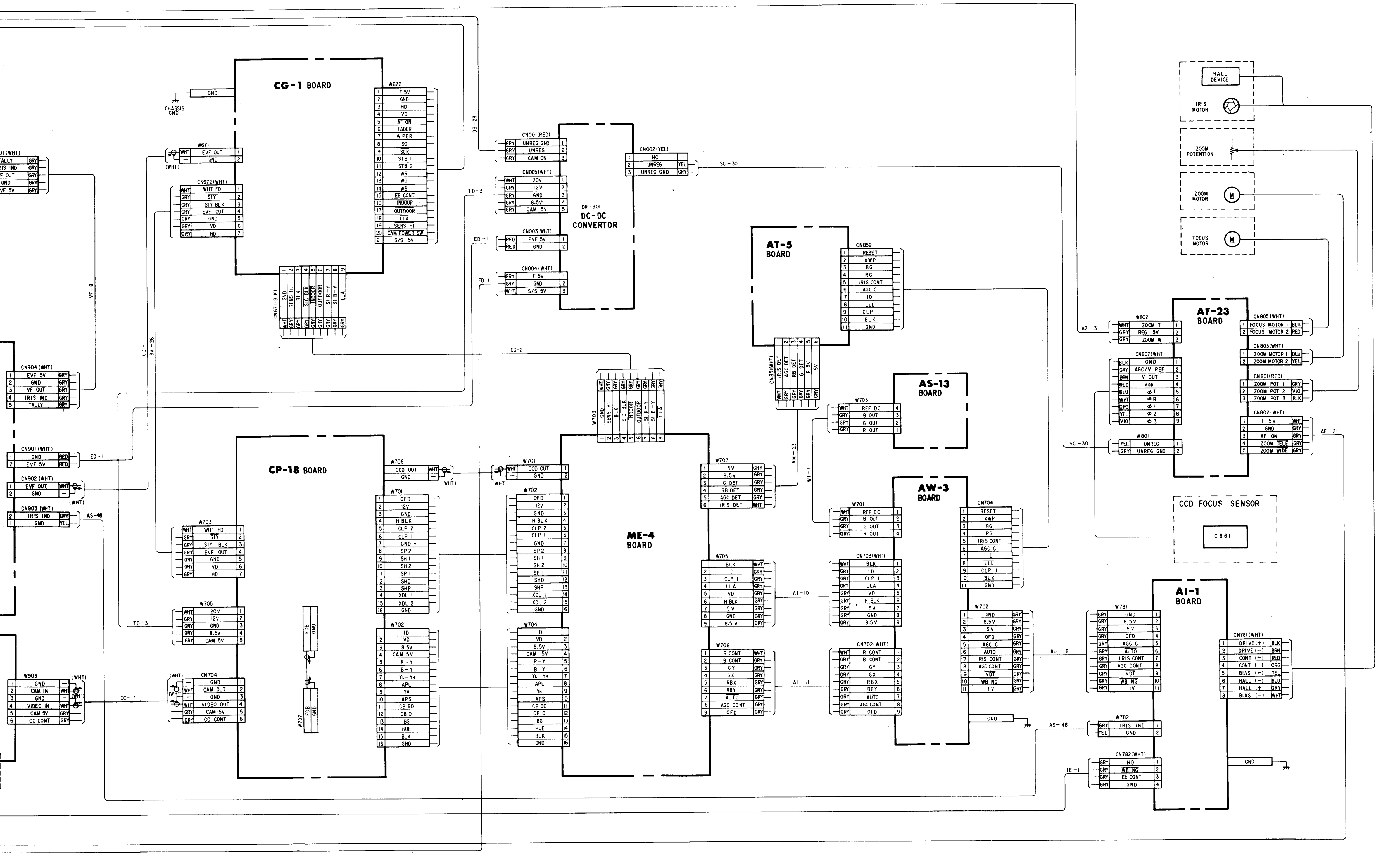

SK-12 BOARD
SS-64 BOARD
RP-40 BOARD
VI-22 BOARD
SC-6 BOARD
CN385 MULTI SYSTEM CONNECTOR
BATTERY or AC ADAPTOR
VF-7 BOARD
MIC UNET
EM-1 BOARD
AU-25 BOARD
RJ-2 BOARD
EP-8 BOARD
CC-6 BOARD
CG-1 BOARD
CP-18 BOARD
DR-901 DC-DC CONVERTOR
ME-4 BOARD
DC-DC CONVERTER DR-201
L901
J401 DC OUT
J402 EXT MIC
J981 EARPHONE
J901
IN
OUT
REMOTE
CHASSIS GND
W203 FLAT CABLE
CHECK PIN
UR-1
SE-10
MS-45
SK-44
DS-28
SH-9
CV-9
VE-2
HS-35
SI-19
SB-4
ME-5
VF-8
AE-11
EF-1
AU-14
EP-1
AS-48
ED-1
FD-11
TD-3
CG-2
CD-11
SV-26
CC-17

FRAME **FRAME**

FRAME

20	21	22	23	24	25	26	27	28	29	30	31	32

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.


CG-1 BOARD
W672
CN001(RED)
CN002(YEL)
CN005(WHT)
CN003(WHT)
CN004(WHT)
DR-901
DC-DC CONVERTOR
W671
CN672(WHT)
CN671(BLK)
CHASSIS GND
AT-5 BOARD
CN852
CN851(WHT)
AS-13 BOARD
W703
AW-3 BOARD
CN704
W701
CN703(WHT)
CN702(WHT)
W702
AF-23 BOARD
W802
CN807(WHT)
W801
CN805(WHT)
CN803(WHT)
CN801(RED)
CN802(WHT)
HALL DEVICE
IRIS MOTOR
ZOOM POTENTION
ZOOM MOTOR
FOCUS MOTOR
CCD FOCUS SENSOR
IC861
AI-1 BOARD
W781
W782
CN782(WHT)
CN781(WHT)
ME-4 BOARD
W706
W701
W702
W704
W703
W707
W705
CP-18 BOARD
W706
W701
W702
W703
W705
CN704
W707
CN904(WHT)
CN901(WHT)
CN902(WHT)
CN903(WHT)
W903
DS-28
TD-3
ED-1
FD-11
SC-30
CG-2
CD-11
SV-26
VF-8
AM-23
WT-1
AI-10
AI-11
AJ-8
AS-48
AZ-3
AF-21
IE-1
CC-17
TD-3
ED-1
AS-48
GND

Note on replacing CCD imager block

- With a pair of IC701 (CCD imager) on the CP-18 complete board and IC002 (Corrector ROM) on the DT-61 complete board, it is used as a repair part of the CCD imager block.
  Since corrector ROM IC is manufactured to match the CCD imager, replacement of a single unit of the CCD imager or corrector ROM cannot be made.
- The IC701 is not mounted on the already mounted CP-18 boad which has been supplied as a repair part and IC002 is not mounted on the already mounted DT-61 board for the same reason.
  When the respective boards are replaced, remove the respective ICs from the old boards and install them to the new ones respectively.
- After the CCD imager block has been replaced, perfrorm the entire adjustments of the camera section.
- CCD imager is structurally capable being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into it.

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note (Printed Wiring Board):

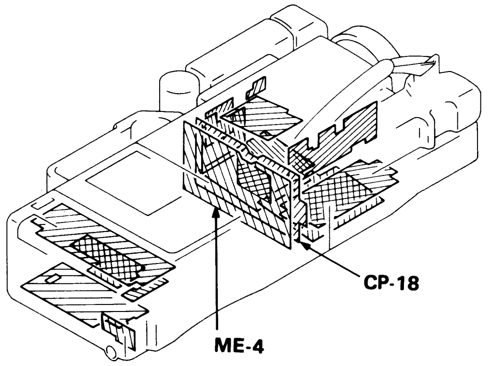
- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (CP-18: Q711, 712) transistor with resistors. Refer to the CP-18 board schematic diagram for digital transistor

Note

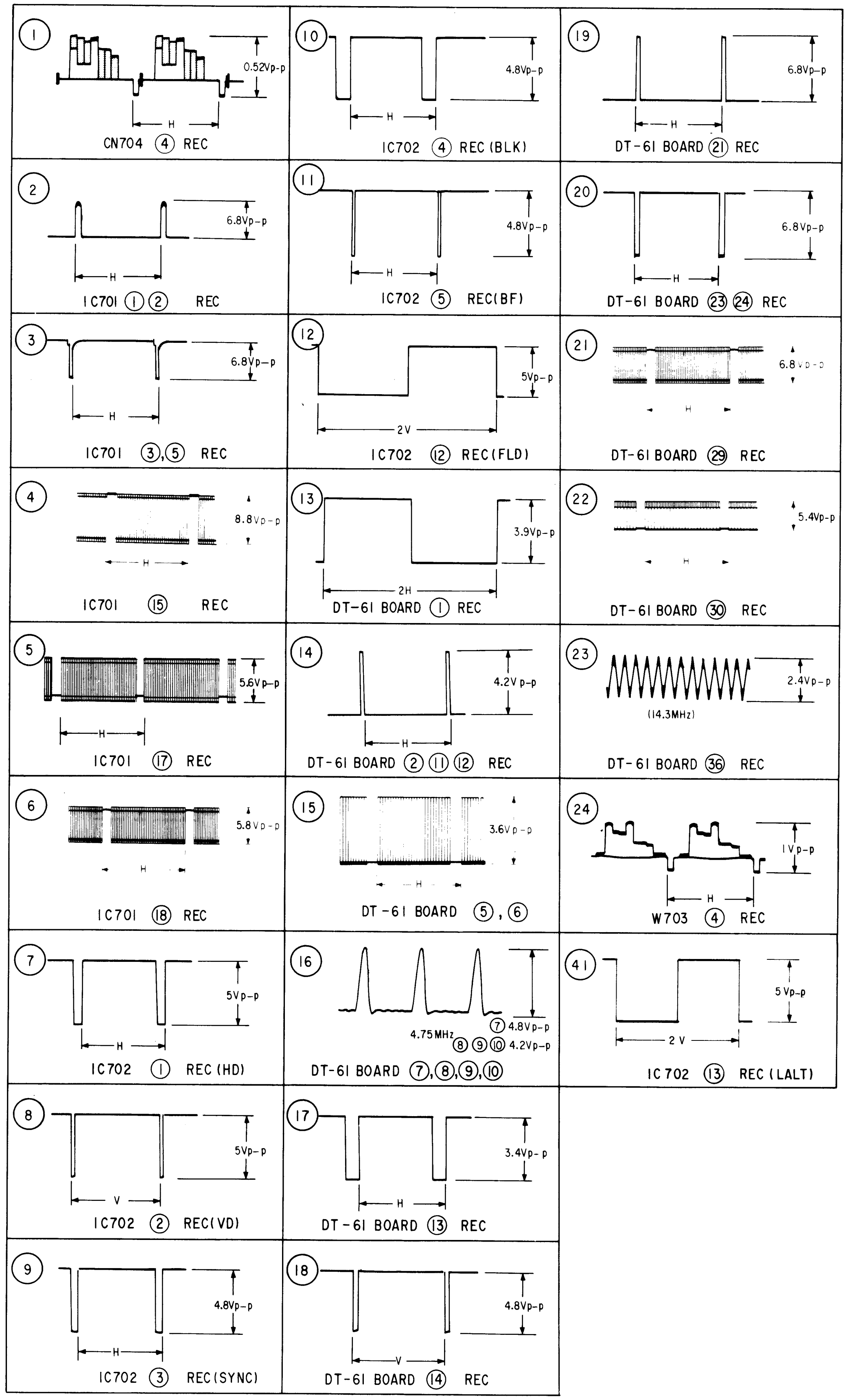
Soldering side:	**Parts on the soldering side being seen from the soldering are stated.**
Component side:	**Parts on the component side being seen from the component are stated.**

Regarding color indication of patterns

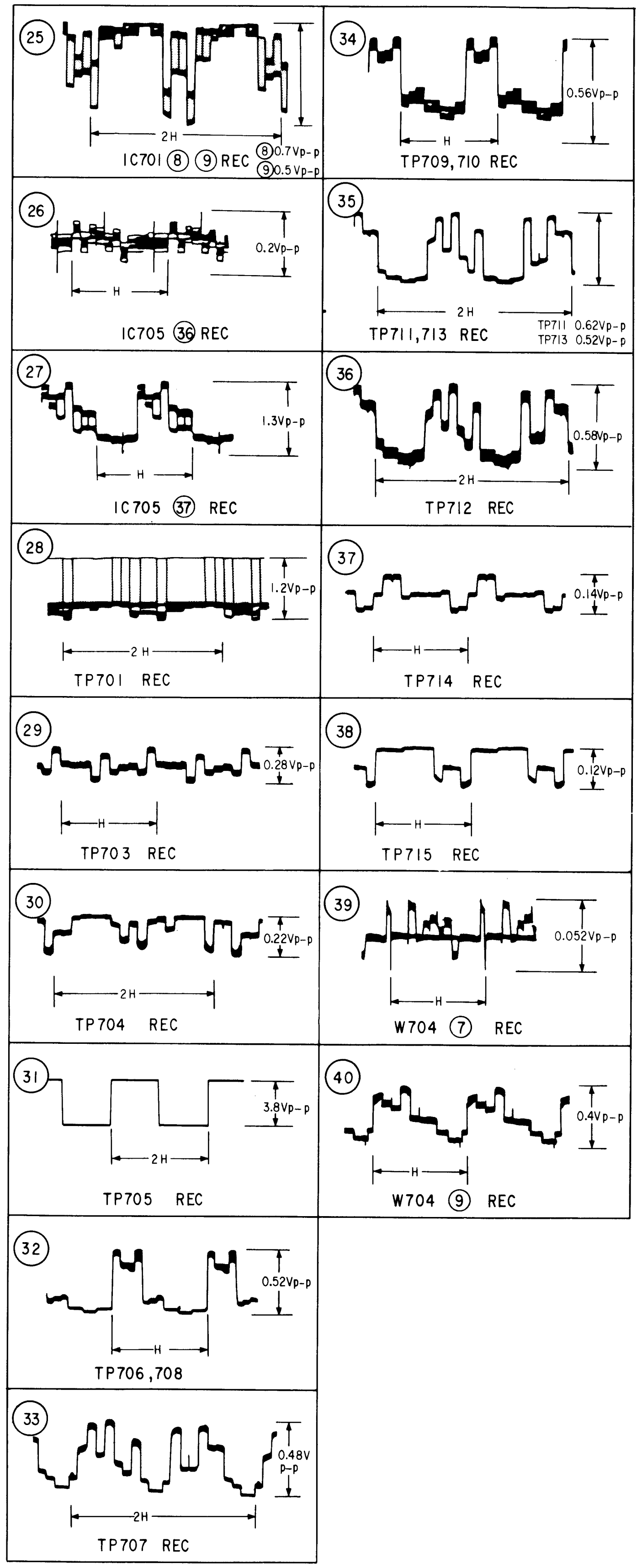
- * **Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).**
- * **Pattern being seen in the state of the rear surface side is indicated in green pattern.**



CP-18 BOARD (CAMERA)



ME-4 BOARD (CAMERA)

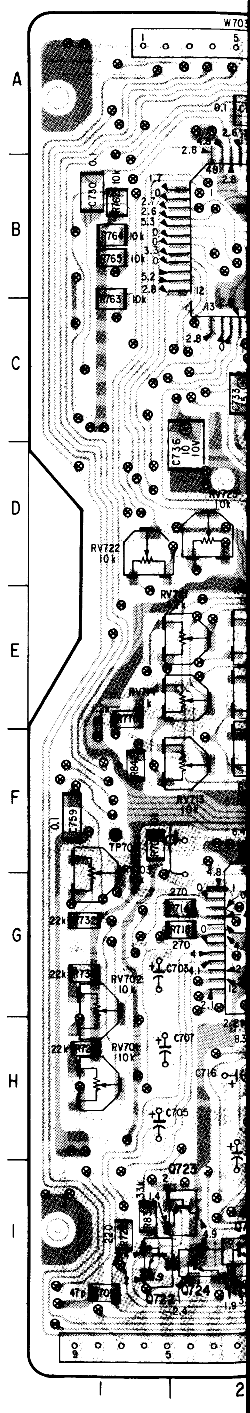


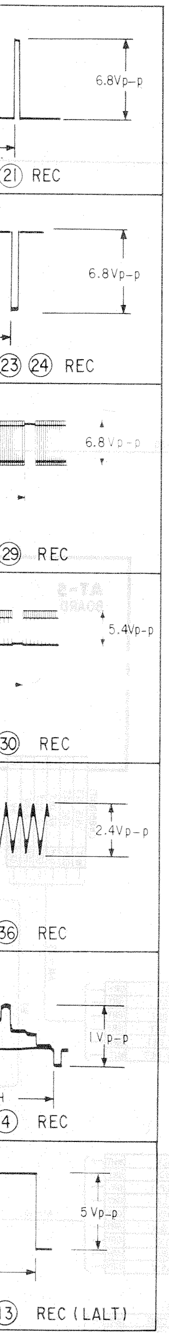
CP-18(CCD IMAGER,SYNC GENERATOR,

– Ref. No. CP-18 BOARD: 1000 series, ME-4 BOAR

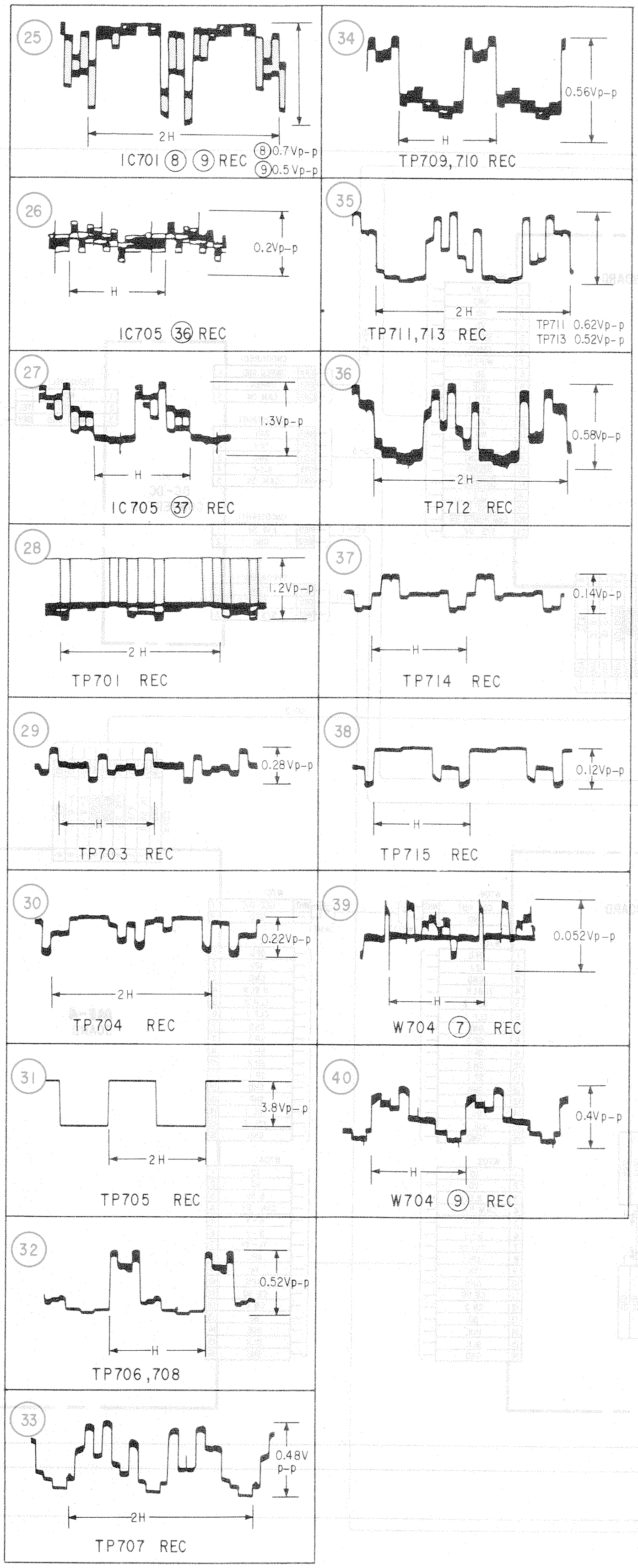
D701	F-8
D702	H-5
D703	H-8
D704	E-10
D705	A-10
D706	E-10
IC701	G-3
IC702	I-7
IC703	G-4
IC704	C-9
IC705	B-2
Q701	G-10
Q702	H-10
Q703	H-10
Q704	I-9
Q705	I-9
Q706	I-9
Q707	F-7
Q708	C-11
Q709	B-11
Q710	C-11
Q711	B-11
Q712	B-4
Q713	B-8
Q714	B-7
Q715	B-4
Q716	B-7
Q717	C-7
Q718	C-8
Q719	C-8
Q720	C-8
Q721	C-4
Q722	I-1
Q723	I-2
Q724	I-2
Q725	I-2
RV701	H-1
RV702	G-1
RV703	F-1
RV704	G-4
RV705	G-4
RV706	F-4
RV707	G-5
RV708	F-4
RV709	I-5
RV710	I-4
RV711	I-5
RV712	I-4
RV713	F-2
RV714	E-2
RV715	F-2
RV716	E-2
RV717	E-2
RV718	F-3
RV719	E-3
RV720	E-3
RV721	E-2
RV722	D-1
RV723	D-2
RV726	A-5
RV727	A-4
RV728	A-4
RV729	A-3
RV730	A-5
RV731	A-3
TP701	H-3
TP703	H-3
TP704	I-3
TP705	H-2
TP706	F-1
TP707	F-3
TP708	D-4
TP709	D-4
TP710	C-5
TP711	C-5
TP712	D-5
TP713	C-5
TP714	B-5
TP715	B-5

ME-4 BOARD (COMPON





ME-4 BOARD (CAMERA)

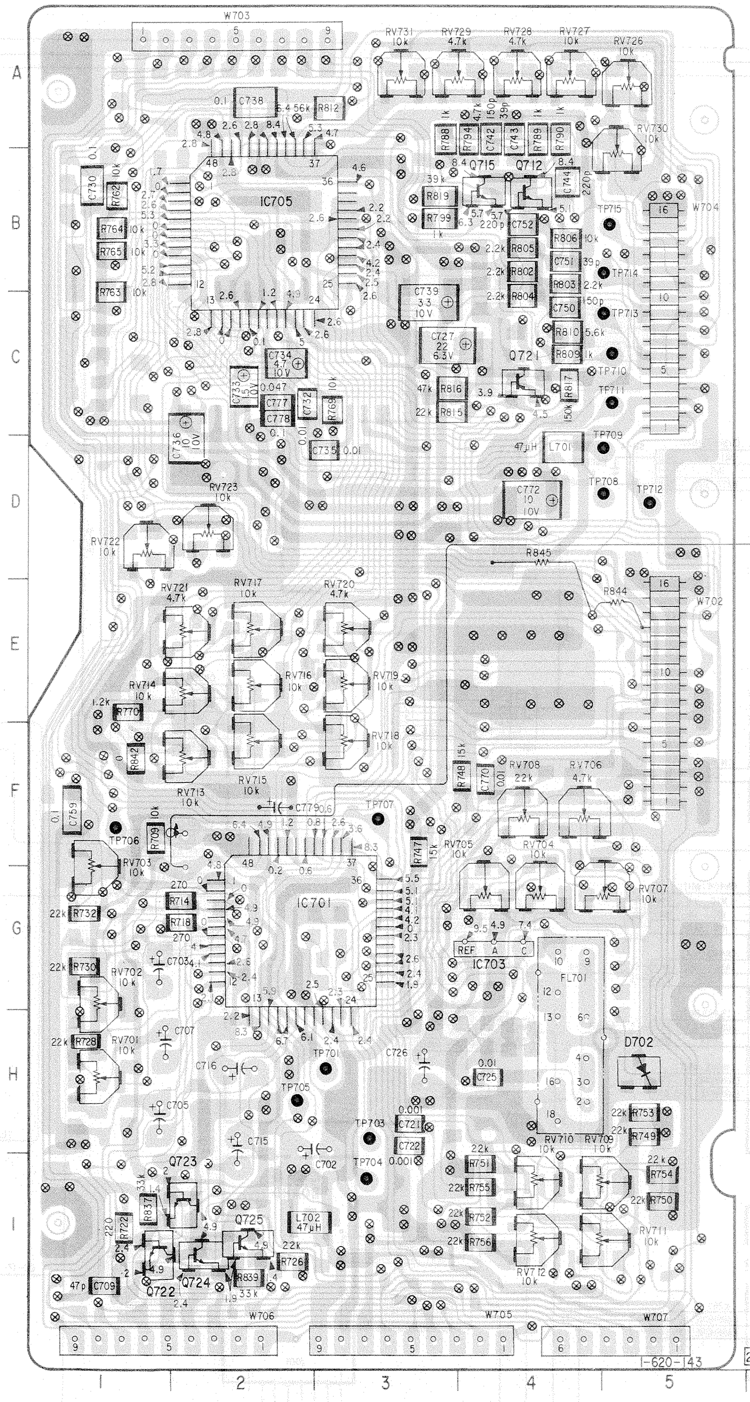


CP-18 (CCD IMAGER, SYNC GENERATOR, ENCODER), ME-4 (CAMERA SIGNAL PROCESS, MATRIX) PRINTED WIRING BOARD

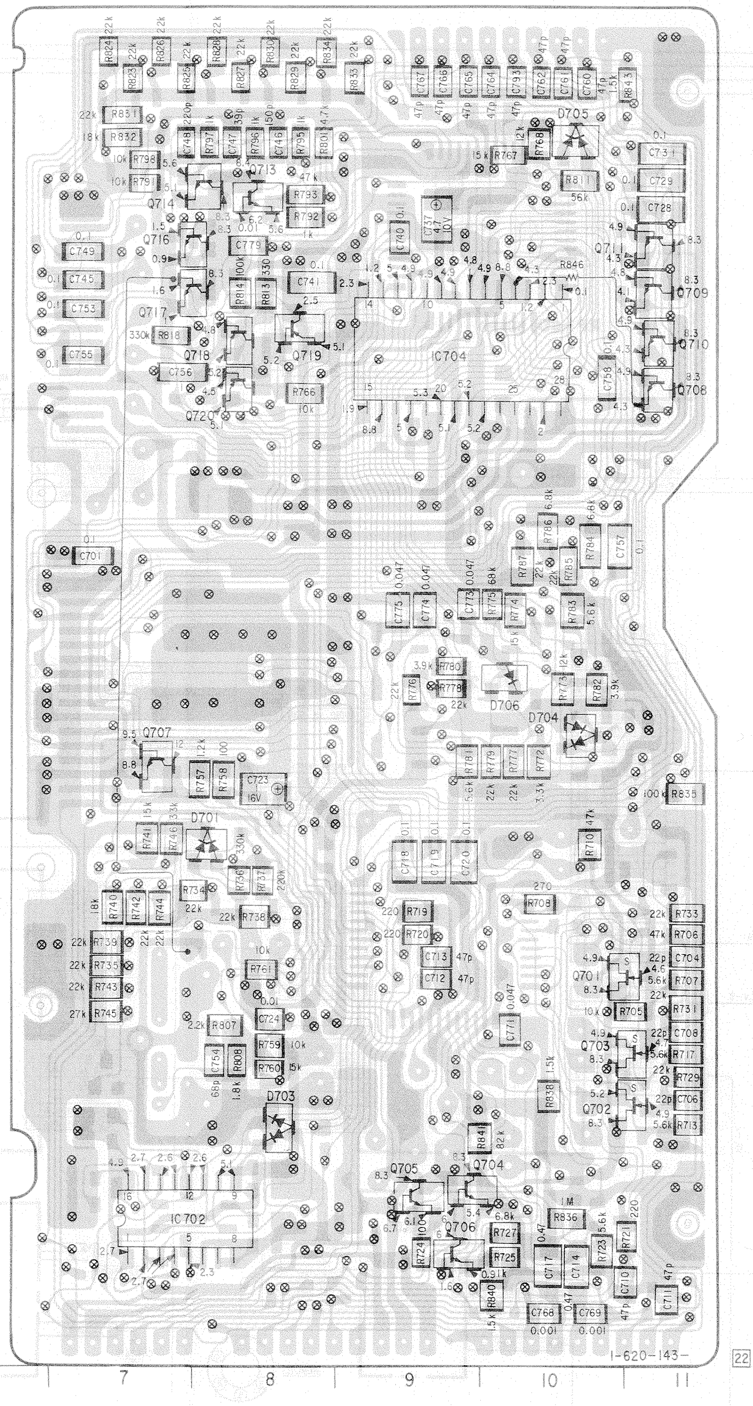
– Ref. No. CP-18 BOARD: 1000 series, ME-4 BOARD: 2000 series –

D701	F-8
D702	H-5
D703	H-8
D704	E-10
D705	A-10
D706	E-10
IC701	G-3
IC702	I-7
IC703	G-4
IC704	C-9
IC705	B-2
Q701	G-10
Q702	H-10
Q703	H-10
Q704	I-9
Q705	I-9
Q706	I-9
Q707	F-7
Q708	C-11
Q709	B-11
Q710	C-11
Q711	B-11
Q712	B-4
Q713	B-8
Q714	B-7
Q715	B-4
Q716	B-7
Q717	C-7
Q718	C-8
Q719	C-8
Q720	C-8
Q721	C-4
Q722	I-1
Q723	I-2
Q724	I-2
Q725	I-2
RV701	H-1
RV702	G-1
RV703	F-1
RV704	G-4
RV705	G-4
RV706	F-4
RV707	G-5
RV708	F-4
RV709	I-5
RV710	I-4
RV711	I-5
RV712	I-4
RV713	F-2
RV714	E-2
RV715	F-2
RV716	E-2
RV717	E-2
RV718	F-3
RV719	E-3
RV720	E-3
RV721	E-2
RV722	D-1
RV723	D-2
RV726	A-5
RV727	A-4
RV728	A-4
RV729	A-3
RV730	A-5
RV731	A-3
TP701	H-3
TP703	H-3
TP704	I-3
TP705	H-2
TP706	F-1
TP707	F-3
TP708	D-4
TP709	D-4
TP710	C-5
TP711	C-5
TP712	D-5
TP713	C-5
TP714	B-5
TP715	B-5

ME-4 BOARD (COMPONENT SIDE) no mark: CAMERA POWER SW ON mode

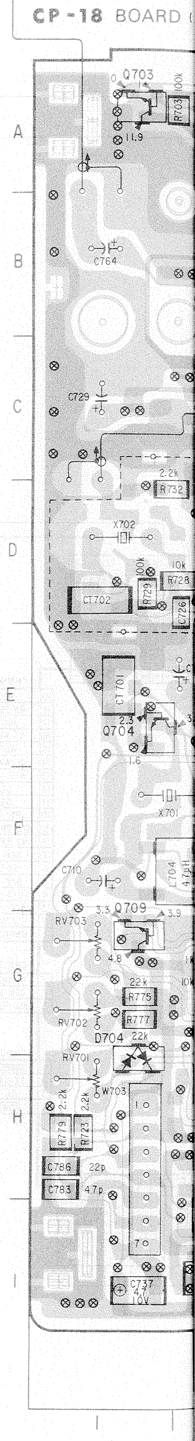

A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
IC705
IC701
IC703
W703
W704
W702
W705
W706
W707
1-620-143-
22

ME-4 BOARD (SOLDER SIDE) no mark: CAMERA POWER SW ON mode


7
8
9
10
11
IC704
IC702
1-620-143-
22

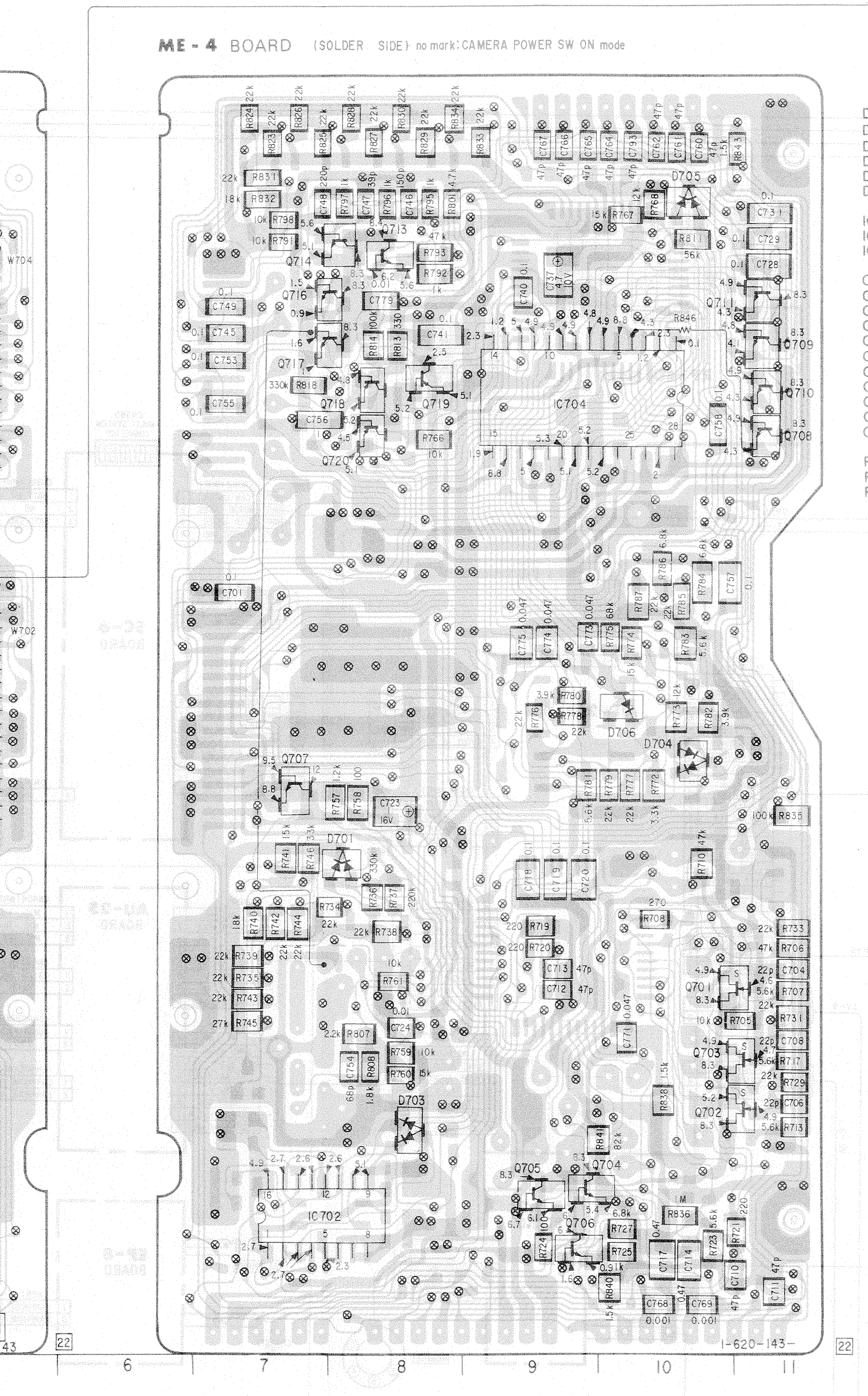
D701	C-10
D702	D-10
D703	I-9
D704	G-1
D708	H-8
D709	G-10
IC701	B-3
IC702	D-8
IC703	H-4
Q701	B-9
Q702	A-2
Q703	A-1
Q704	E-1
Q705	F-10
Q706	D-10
Q708	G-9
Q709	G-1
Q710	H-10
Q711	I-2
Q712	I-10
RV701	H-1
RV702	G-1
RV703	G-1

CP-18 BOARD


A
B
C
D
E
F
G
H
I
Q703
Q704
Q709
X702
D704

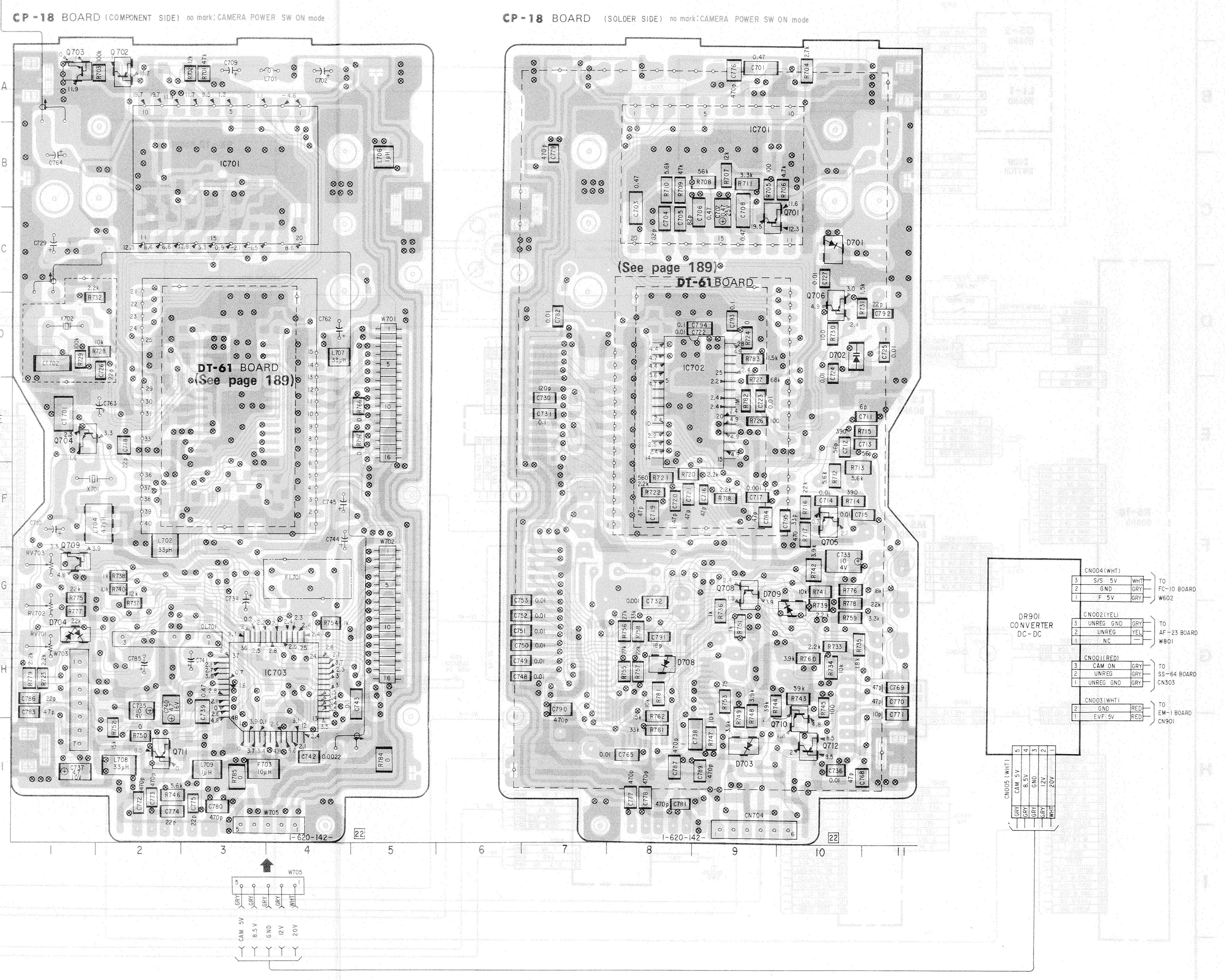
PROCESS, MATRIX) PRINTED WIRING BOARD

Be sure to always read "Note on replacing the CCD imager block" in page 111 when replacing the CP-18 complete board, DT-61 complete board, and CCD imager block (IC701 on the CP-18 board and IC002 on the DT-61 board).


ME-4 BOARD (SOLDER SIDE) no mark: CAMERA POWER SW ON mode

IC702
IC704
1-620-143-
22
6
7
8
9
10
11

D701	C-10
D702	D-10
D703	I-9
D704	G-1
D708	H-8
D709	G-10
IC701	B-3
IC702	D-8
IC703	H-4
Q701	B-9
Q702	A-2
Q703	A-1
Q704	E-1
Q705	F-10
Q706	D-10
Q708	G-9
Q709	G-1
Q710	H-10
Q711	I-2
Q712	I-10
RV701	H-1
RV702	G-1
RV703	G-1

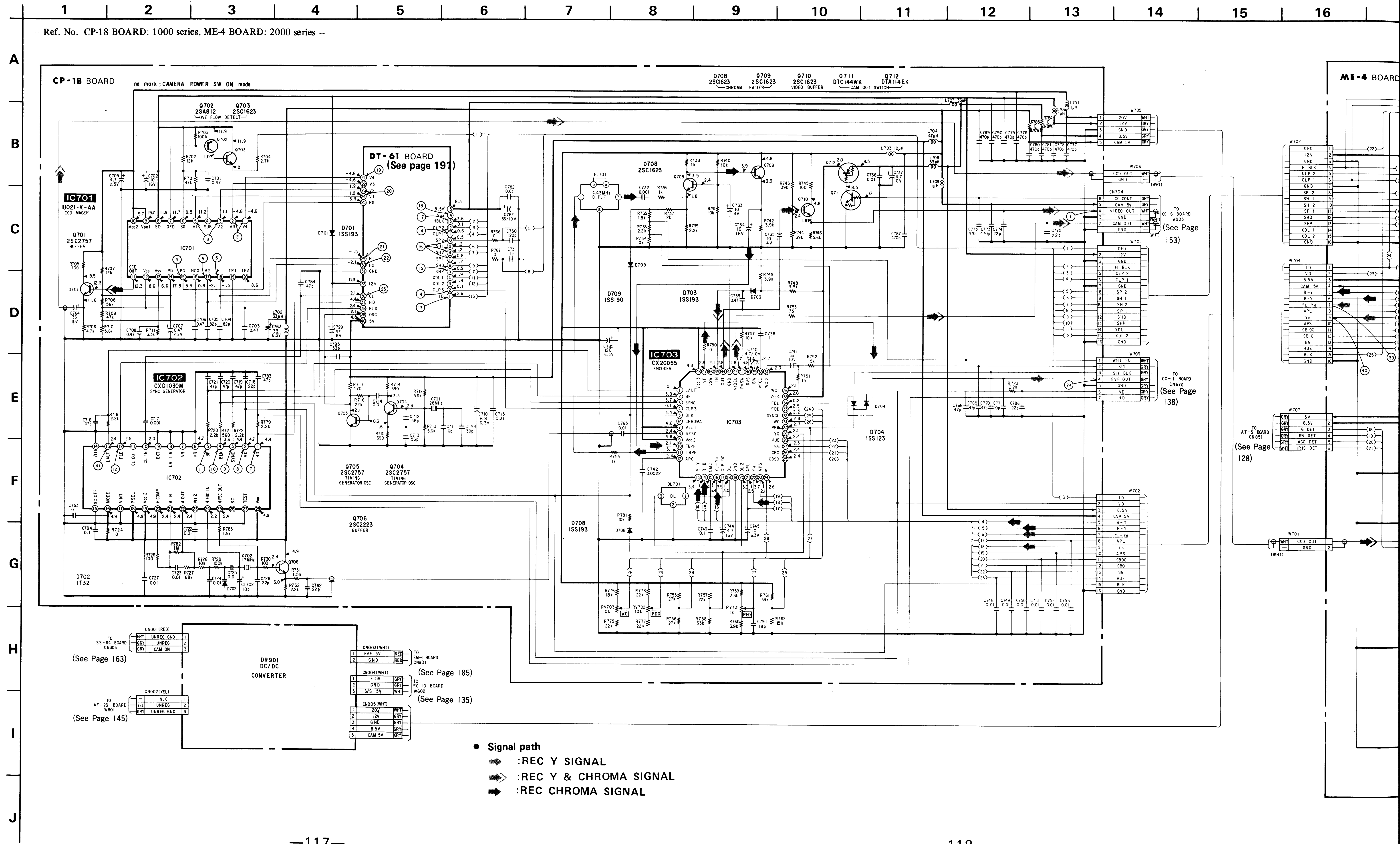

CP-18 BOARD (COMPONENT SIDE) no mark: CAMERA POWER SW ON mode

CP-18 BOARD (SOLDER SIDE) no mark: CAMERA POWER SW ON mode

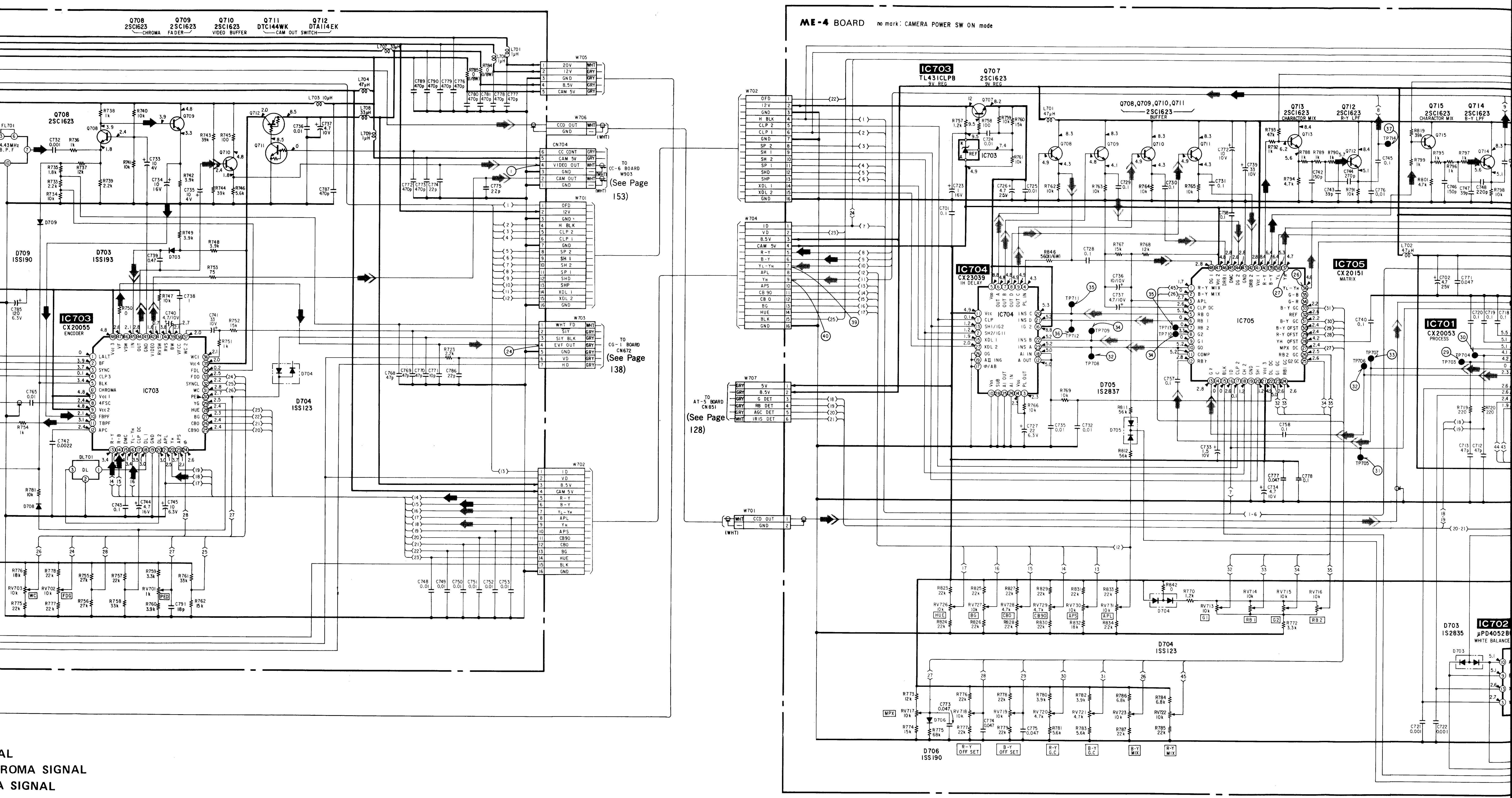
DT-61 BOARD
(See page 189)
IC701
IC702
IC703
W701
W702
W705
CN704
1-620-142-
22
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
11
W705
GRY
GRY
GRY
GRY
WHT
CAM 5V
8.5V
GND
12V
20V
DR901
CONVERTER
DC-DC
CN004(WHT)
3 S/S 5V WHT
2 GND GRY
1 F 5V GRY
TO FC-10 BOARD W602
CN002(YEL)
3 UNREG GND GRY
2 UNREG YEL
1 NC —
TO AF-23 BOARD W801
CN001(RED)
3 CAM ON GRY
2 UNREG GRY
1 UNREG GND GRY
TO SS-64 BOARD CN303
CN003(WHT)
2 GND RED
1 EVF 5V RED
TO EM-1 BOARD CN901
CN005 (WHT)
CAM 5V
8.5V
GND
12V
20V

CP-18(CCD IMAGER, SYNC GENERATOR, ENCODER), ME-4 (CAMERA SIGNAL PROCESS, MATRIX) SCHEMATIC DIAGRAM

– Ref. No. CP-18 BOARD: 1000 series, ME-4 BOARD: 2000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
CP-18 BOARD
no mark : CAMERA POWER SW ON mode
Q702 2SA812
Q703 2SC1623
OVE FLOW DETECT
IC701
IU021-K-AA
CCD IMAGER
Q701 2SC2757 BUFFER
IC702
CXD1030M
SYNC GENERATOR
DT-61 BOARD
(See page 191)
D701 1SS193
Q705 2SC2757 TIMING GENERATOR OSC
Q704 2SC2757 TIMING GENERATOR OSC
Q706 2SC2223 BUFFER
D702 1T32
X701 28MHz
X702 17MHz
FL701 4.43MHz B.P.F
Q708 2SC1623
Q709 2SC1623
Q710 2SC1623
Q711 DTC144WK
Q712 DTA114EK
CHROMA FADER
VIDEO BUFFER
CAM OUT SWITCH
IC703
CX20055
ENCODER
D709 1SS190
D703 1SS193
D704 1SS123
D708 1SS193
DL701
RV703 WC
RV702 FDG
RV701 PED
W705
20V
12V
GND
8.5V
CAM 5V
W706
CCD OUT
GND
CN704
CC CONT
CAM 5V
VIDEO OUT
CAM OUT
TO CC-6 BOARD W903 (See Page 153)
W701
W703
WHT FD
SIY
SIY BLK
EVF OUT
VD
HD
TO CG-1 BOARD CN672 (See Page 138)
W702
ME-4 BOARD
W704
W707
5V
8.5V
G DET
RB DET
AGC DET
IRIS DET
TO AT-5 BOARD CN851 (See Page 128)
CN001(RED)
UNREG GND
UNREG
CAM ON
TO SS-64 BOARD CN303 (See Page 163)
CN002(YEL)
N.C
UNREG
UNREG GND
TO AF-23 BOARD W801 (See Page 145)
DR901
DC/DC CONVERTER
CN003(WHT)
EVF 5V
GND
TO EM-1 BOARD CN901 (See Page 185)
CN004(WHT)
F 5V
S/S 5V
TO FC-10 BOARD W602 (See Page 135)
CN005(WHT)
20V
12V
GND
8.5V
CAM 5V

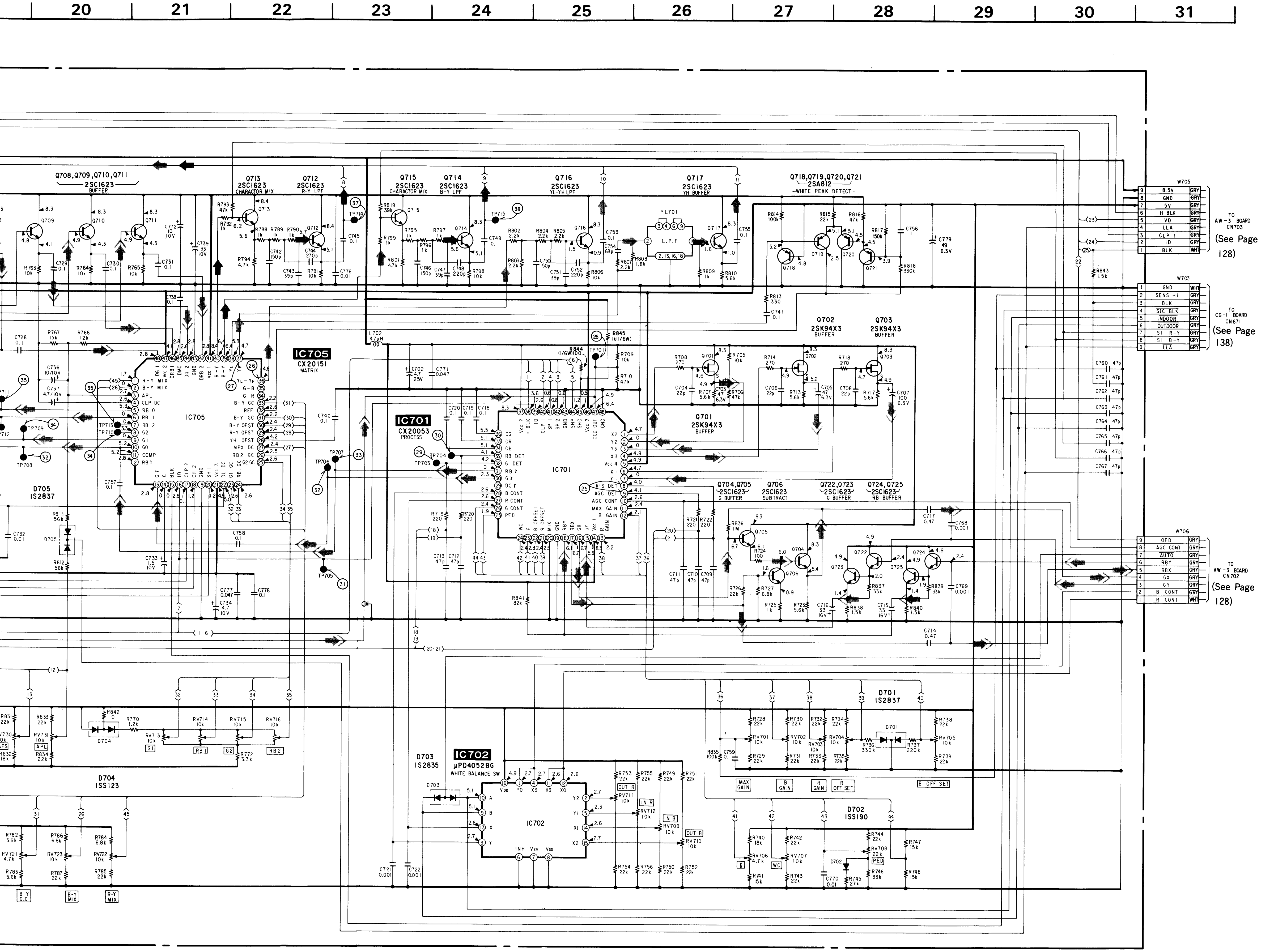
- **Signal path**
  - ➡ :REC Y SIGNAL
  - ⇨ :REC Y & CHROMA SIGNAL
  - ➡ :REC CHROMA SIGNAL


Q708 2SC1623 CHROMA
Q709 2SC1623 FADER
Q710 2SC1623 VIDEO BUFFER
Q711 DTC144WK CAM OUT SWITCH
Q712 DTA114EK
IC703 CX20055 ENCODER
D709 1SS190
D703 1SS193
D704 1SS123
DL701
W705
W706
CN704
W701
W703
W702
TO CC-6 BOARD W903 (See Page 153)
TO CG-1 BOARD CN672 (See Page 138)
TO AT-5 BOARD CN851 (See Page 128)
ME-4 BOARD no mark: CAMERA POWER SW ON mode
IC703 TL431CLPB 9V REG
Q707 2SC1623 9V REG
Q708,Q709,Q710,Q711 2SC1623 BUFFER
Q713 2SC1623 CHARACTOR MIX
Q712 2SC1623 R-Y LPF
Q715 2SC1623 CHARACTOR MIX
Q714 2SC1623 B-Y LPF
IC704 CX23039 1H DELAY
IC705 CX20151 MATRIX
IC701 CX20053 PROCESS
IC702 μPD4052B WHITE BALANCE
D705 1S2837
D703 1S2835
D704 1SS123
D706 1SS190
W704
W707
HUE
BG
CB0
CB90
APS
APL
G1
RB1
G2
RB2
MPX
R-Y OFF SET
B-Y OFF SET
R-Y G.C
B-Y G.C
B-Y MIX
R-Y MIX
WC
FDG
PED

AL

ROMA SIGNAL

A SIGNAL

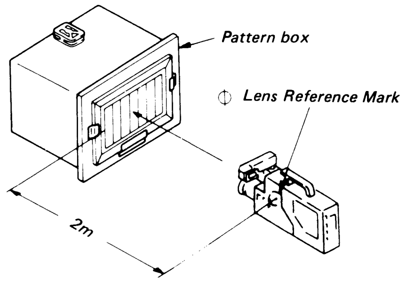

20
21
22
23
24
25
26
27
28
29
30
31
Q708,Q709,Q710,Q711
2SC1623
BUFFER
Q713
2SC1623
CHARACTOR MIX
Q712
2SC1623
R-Y LPF
Q715
2SC1623
CHARACTOR MIX
Q714
2SC1623
B-Y LPF
Q716
2SC1623
YL-YH LPF
Q717
2SC1623
YH BUFFER
Q718,Q719,Q720,Q721
2SA812
WHITE PEAK DETECT
FL701
L.P.F
IC705
CX20151
MATRIX
IC701
CX20053
PROCESS
Q702
2SK94X3
BUFFER
Q703
2SK94X3
BUFFER
Q701
2SK94X3
BUFFER
Q704,Q705
2SC1623
G BUFFER
Q706
2SC1623
SUBTRACT
Q722,Q723
2SC1623
G BUFFER
Q724,Q725
2SC1623
RB BUFFER
D705
1S2837
D704
1SS123
D703
1S2835
IC702
μPD4052BG
WHITE BALANCE SW
D701
1S2837
D702
1SS190
W705
8.5V
GND
5V
H BLK
VD
LLA
CLP I
ID
BLK
TO AW-3 BOARD CN703
(See Page 128)
W703
GND
SENS HI
BLK
SIC BLK
INDOOR
OUTDOOR
SI R-Y
SI B-Y
LLA
TO CG-1 BOARD CN671
(See Page 138)
W706
OFD
AGC CONT
AUTO
RBY
RBX
GX
GY
B CONT
R CONT
TO AW-3 BOARD CN702
(See Page 128)
MAX GAIN
B GAIN
R GAIN
R OFF SET
B OFF SET
OUT R
IN R
IN B
OUT B
PED
WC

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat..
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance. kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) The voltage value is a reference value between the grounding.
  (The tester used is the digital multimeter DC10MΩ)

When indicating parts by reference number, please include the board name.

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

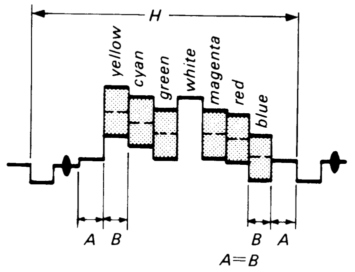

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A=B

Fig. a Camera output waveform of Pin ② of CN201 on VI-22 board

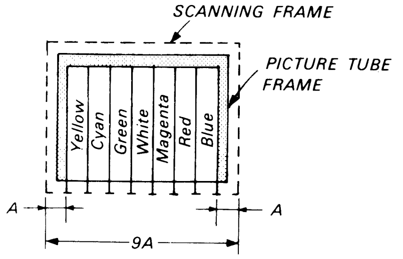

SCANNING FRAME
PICTURE TUBE FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

Fig. b Picture of TV monitor screen

Note (Printed Wiring Board):

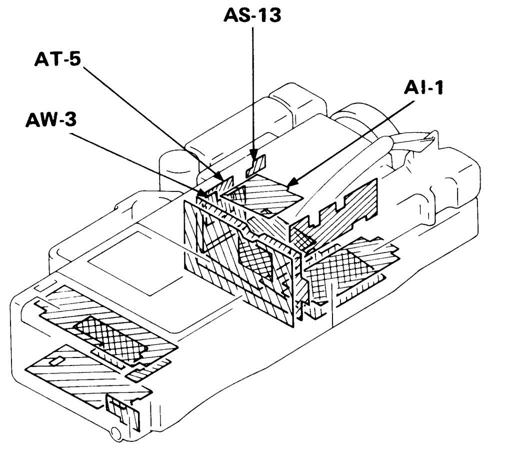
- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▒ : pattern from the side which enables seeing.
- ░ : pattern of the rear side.
- ░ : B+ Pattern.
- Digital transistor (AW-3: Q701, AI-1: Q790, AT-5: Q852, 854) transistor with resistors.
  Refer to the AW-3, AI-1, AT-5 boards schematic diagram for digital transistor.

Note

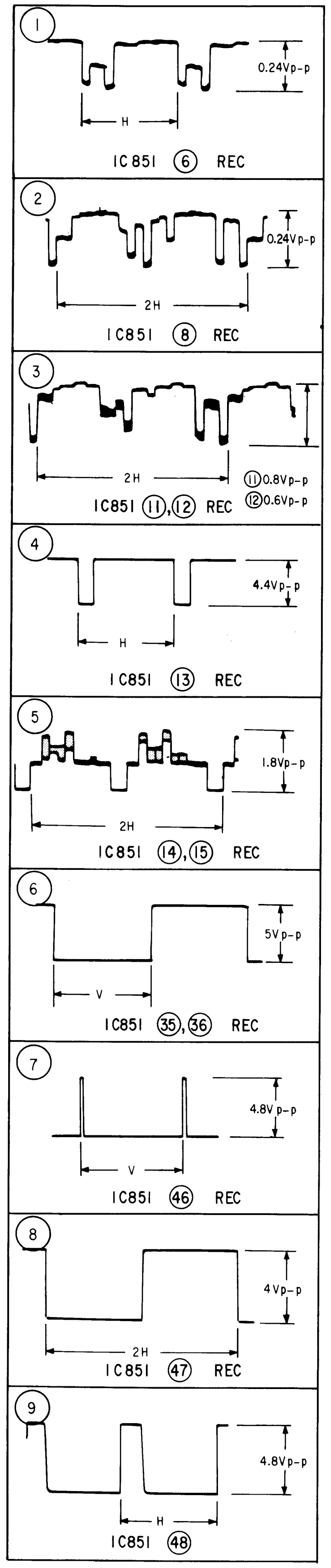
Soldering side:	**Parts on the soldering side being seen from the soldering are stated.**
Component side:	**Parts on the component side being seen from the component are stated.**

Regarding color indication of patterns

- **Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).**
- **Pattern being seen in the state of the rear surface side is indicated in green pattern.**



AT-5 BOARD (CAMERA)



ide.
e.
seeing.

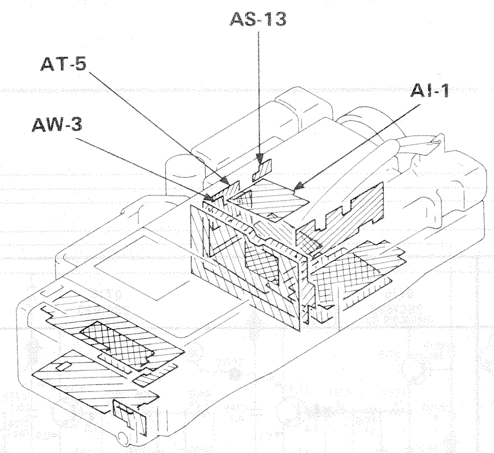
-5: Q852, 854)

tic diagram for

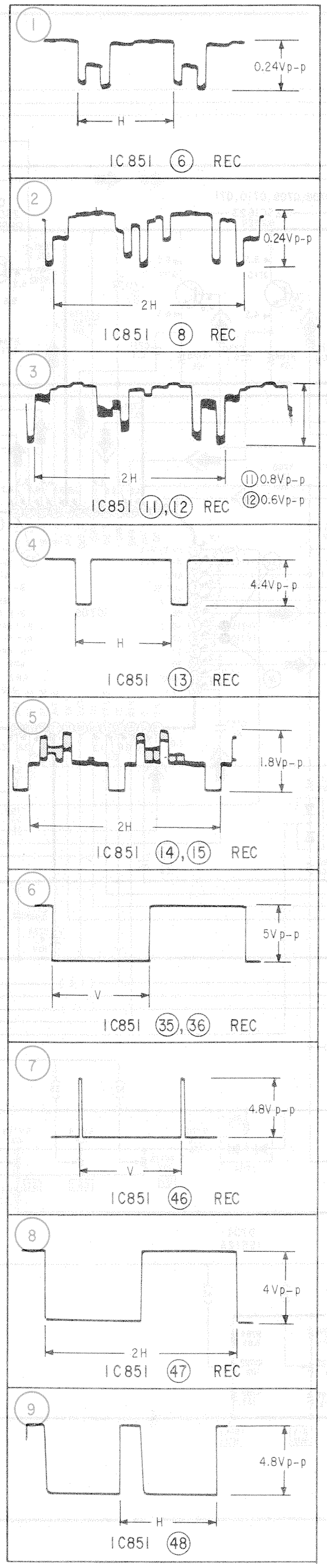
being
stated.
being
t are

urface
pattern

urface


AS-13
AT-5
AI-1
AW-3

AT-5 BOARD (CAMERA)

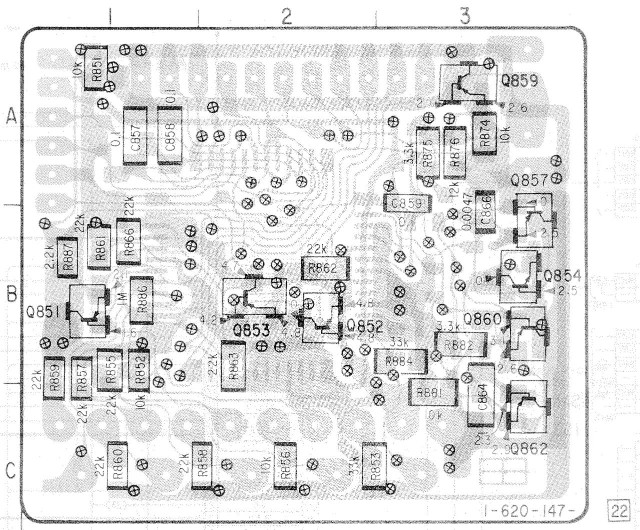


AW-3 (AUTO WHITE BALANCE), AT-5 (WHITE BALANCE, IRIS, AGC DETECTION), AS-13 (WHITE BALANCE SENSOR), AI-1 (AGC, IRIS CONT

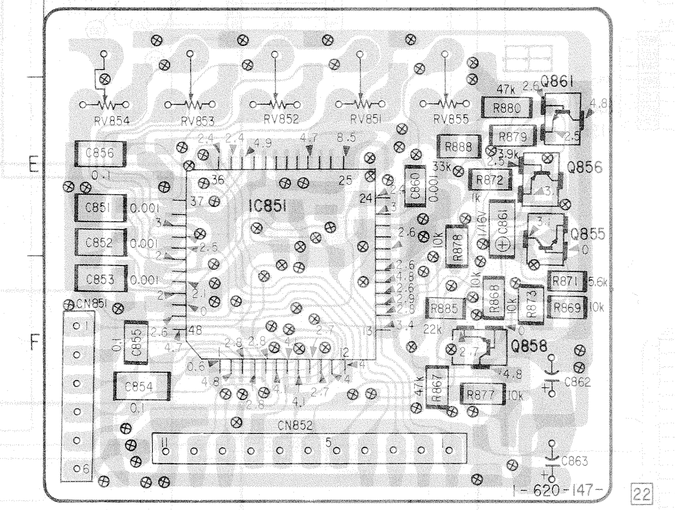
– Ref. No. AW-3, AT-5 BOARDS: 3000 series, AI-1 BOARD: 4000 series, AS-13 BOARD: 5000 series –

IC851	E-2
Q851	B-1
Q852	B-2
Q853	B-2
Q854	B-3
Q855	E-3
Q856	E-3
Q857	B-3
Q858	F-3
Q859	A-3
Q860	B-3
Q861	E-3
Q862	B-3
RV851	E-2
RV852	E-2
RV853	E-1
RV854	E-1
RV855	E-3

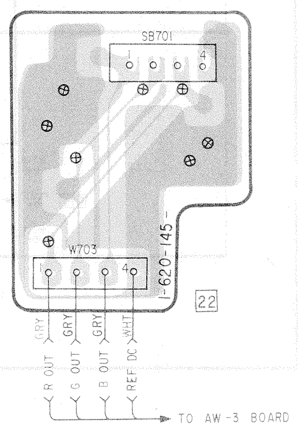
AT-5 BOARD (SOLDER SIDE) no mark: CAMERA POWER SW ON mode


1
2
3
A
B
C
Q859
Q857
Q854
Q860
Q862
Q853
Q852
Q851
1-620-147-
22

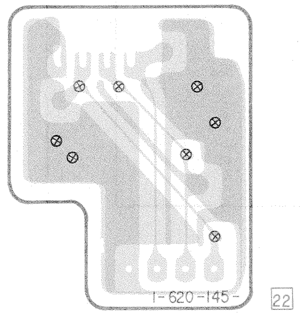
AT-5 BOARD (COMPONENT SIDE) no mark: CAMERA POWER SW ON mode


D
E
F
RV854
RV853
RV852
RV851
RV855
Q861
Q856
Q855
Q858
IC851
CN851
CN852
C863
1-620-147-
22

AS-13 BOARD (COMPONENT SIDE)

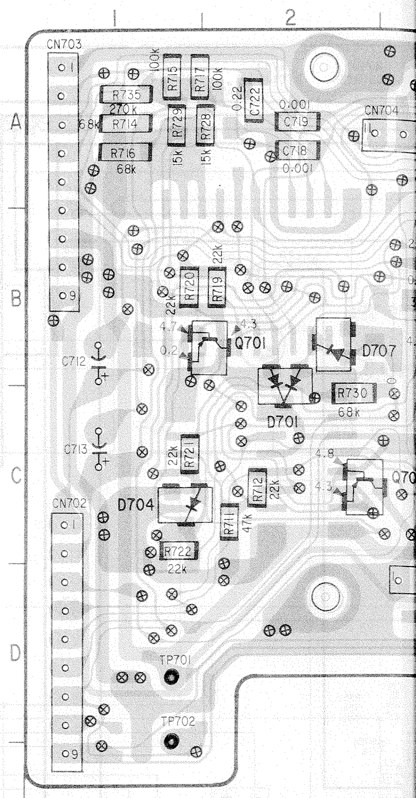

SB701
W703
1-620-145-
22
R OUT
G OUT
B OUT
REF DC
TO AW-3 BOARD

AS-13 BOARD (SOLDER SIDE)

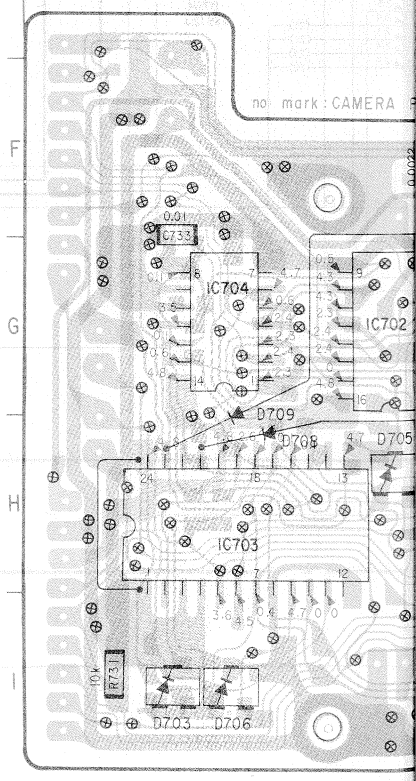


D701	B-2
D703	I-1
D704	C-1
D705	H-3
D706	I-2
D707	B-2
D708	H-2
D709	H-2
IC701	B-3
IC702	G-3
IC703	H-2
IC704	G-2
Q701	B-1
Q702	C-2
RV701	A-4
RV702	A-4
TP701	D-1
TP702	D-1

AW-3 BOARD (COMPONENT SIDE) no mark:


1
2
A
B
C
D
CN703
CN702
Q701
D707
D701
D704
TP701
TP702

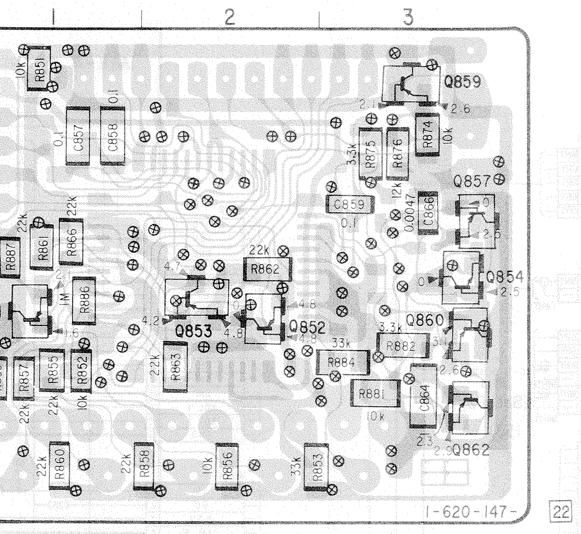
AW-3 BOARD (SOLDER SIDE)


E
F
G
H
I
no mark: CAMERA
IC704
IC702
IC703
D709
D708
D705
D703
D706

ANCE), AT-5 (WHITE BALANCE, IRIS, AGC DETECTION), AS-13 (WHITE BALANCE SENSOR), AI-1 (AGC, IRIS CONTROL) PRINTED WIRING BOARD

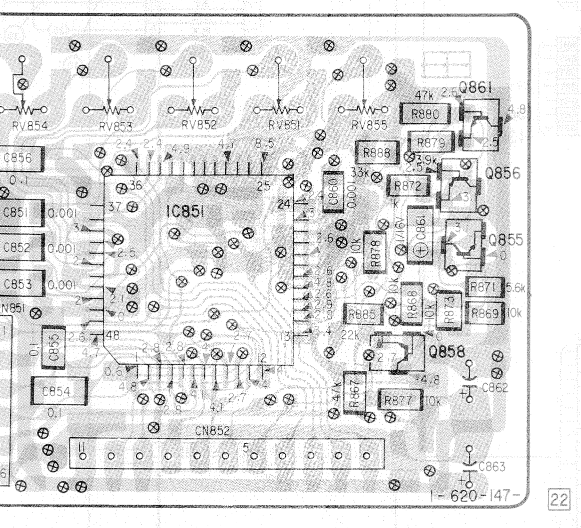
S: 3000 series, AI-1 BOARD: 4000 series, AS-13 BOARD: 5000 series –

-5 BOARD(SOLDER SIDE) no mark : CAMERA POWER SW ON mode



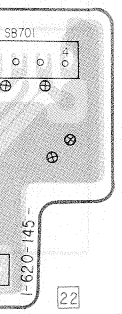
Q859
Q857
Q854
Q860
Q853
Q852
Q862
1-620-147-
22

T-5 BOARD (COMPONENT SIDE) no mark: CAMERA POWER SW ON mode



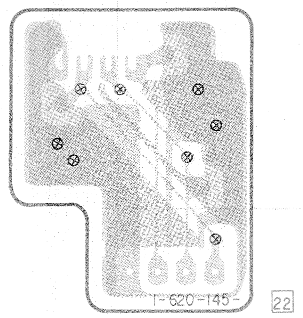
RV854
RV853
RV852
RV851
RV855
Q861
Q856
Q855
IC851
Q858
CN852
1-620-147-
22

RD(COMPONENT SIDE)



SB701
1-620-145
22

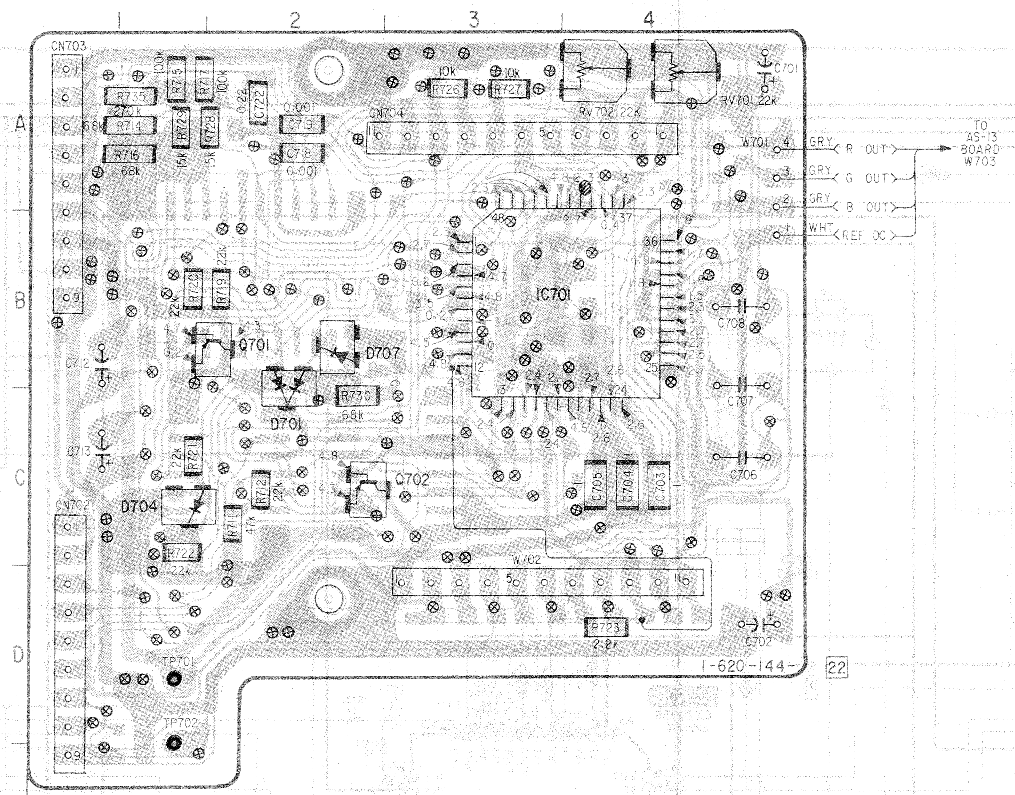
AS-13 BOARD(SOLDER SIDE)



→ TO AW-3 BOARD

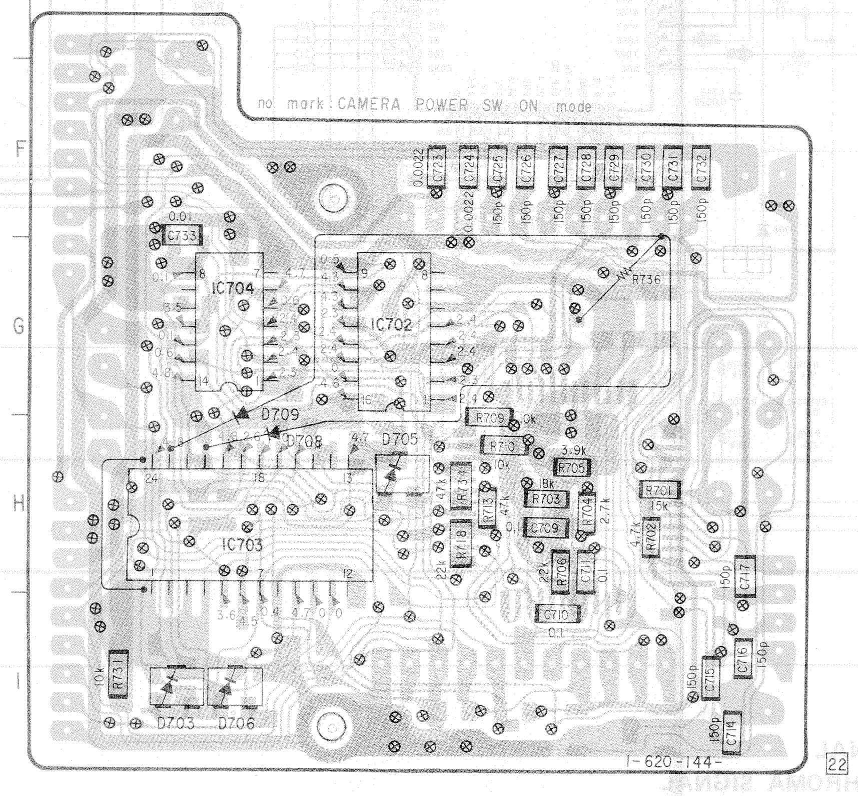
D701	B-2
D703	I-1
D704	C-1
D705	H-3
D706	I-2
D707	B-2
D708	H-2
D709	H-2
IC701	B-3
IC702	G-3
IC703	H-2
IC704	G-2
Q701	B-1
Q702	C-2
RV701	A-4
RV702	A-4
TP701	D-1
TP702	D-1

AW-3 BOARD(COMPONENT SIDE) no mark : CAMERA POWER SW ON mode



CN703
CN704
RV702 22k
RV701 22k
W701
GRY R OUT
GRY G OUT
GRY B OUT
WHT REF DC
TO AS-13 BOARD W703
IC701
Q701
D707
D701
Q702
D704
CN702
W702
TP701
TP702
1-620-144-
22

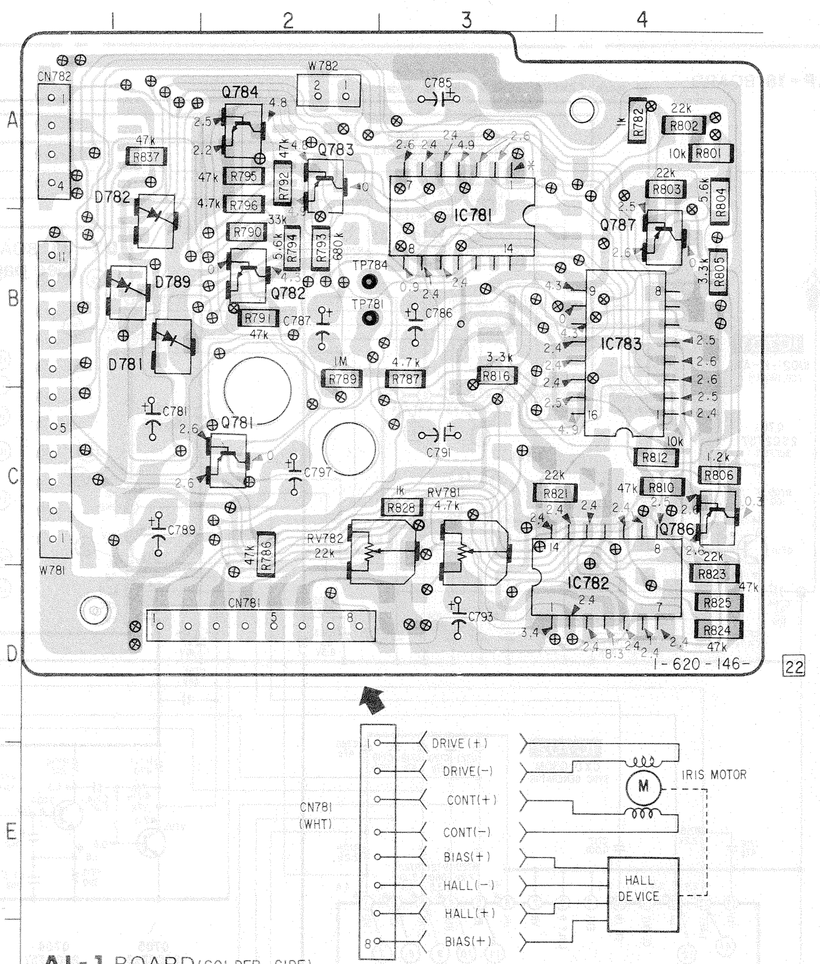
AW-3 BOARD(SOLDER SIDE)



no mark : CAMERA POWER SW ON mode
IC704
IC702
D709
D708
D705
IC703
D703
D706
1-620-144-
22

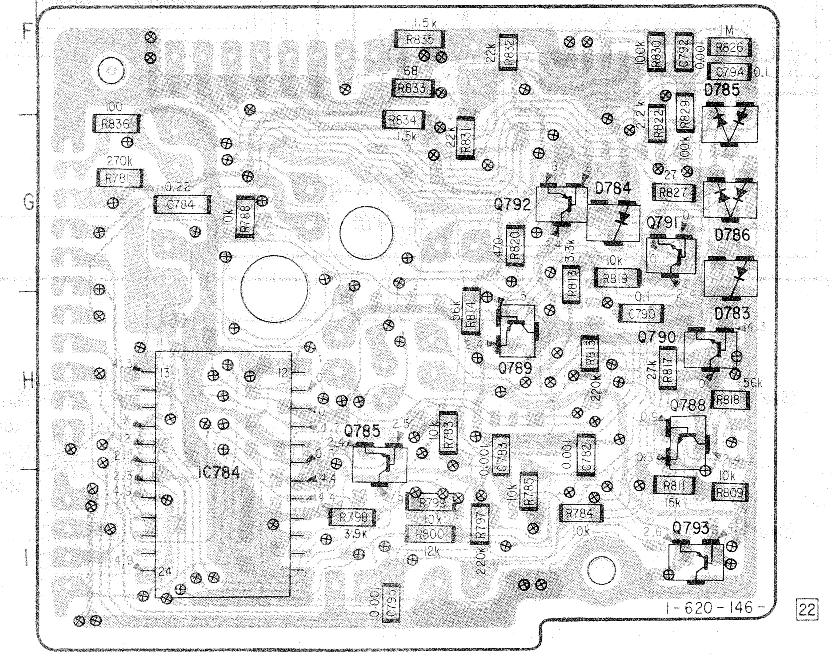
D781	B-1
D782	B-1
D783	H-4
D784	G-4
D785	G-4
D786	G-4
D789	B-1
IC781	B-3
IC782	D-4
IC783	B-4
IC784	H-2
Q781	C-2
Q782	B-2
Q783	A-2
Q784	A-2
Q785	I-2
Q786	C-4
Q787	B-4
Q788	H-4
Q789	H-3
Q790	H-4
Q791	G-4
Q792	G-3
Q793	I-4
RV781	C-3
RV782	C-2
TP781	B-2
TP784	B-2

AI-1 BOARD(COMPONENT SIDE) no mark : CAMERA POWER SW ON mode ＊: can not be measured



CN782
Q784
Q783
IC781
D782
Q787
D789
Q782
TP784
TP781
IC783
D781
Q781
RV781
RV782
Q786
IC782
W781
CN781
1-620-146-
22
DRIVE(+)
DRIVE(−)
CONT(+)
CONT(−)
BIAS(+)
HALL(−)
HALL(+)
BIAS(+)
CN781 (WHT)
IRIS MOTOR
M
HALL DEVICE

AI-1 BOARD(SOLDER SIDE)

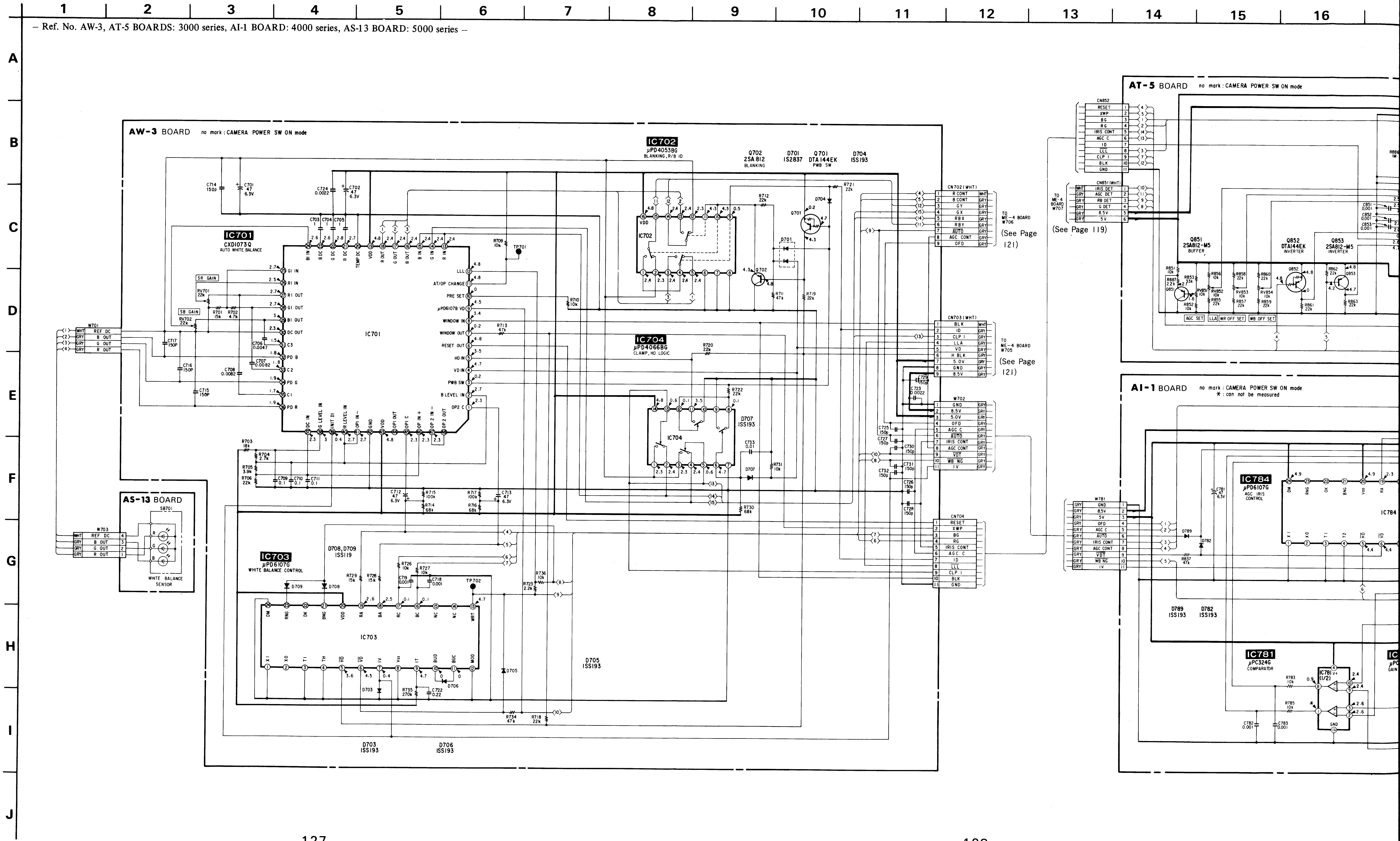


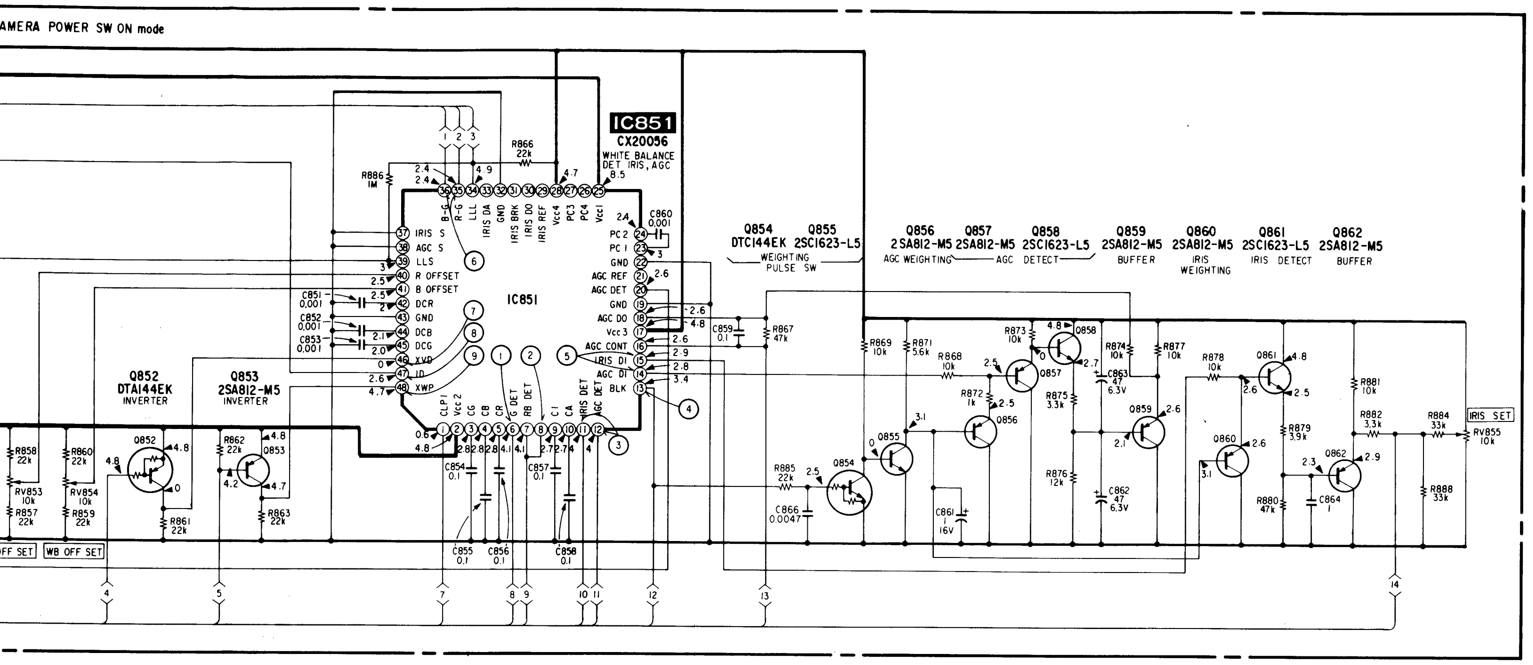
D785
D784
Q792
Q791
D786
D783
Q790
Q789
Q788
Q785
IC784
Q793
1-620-146-
22

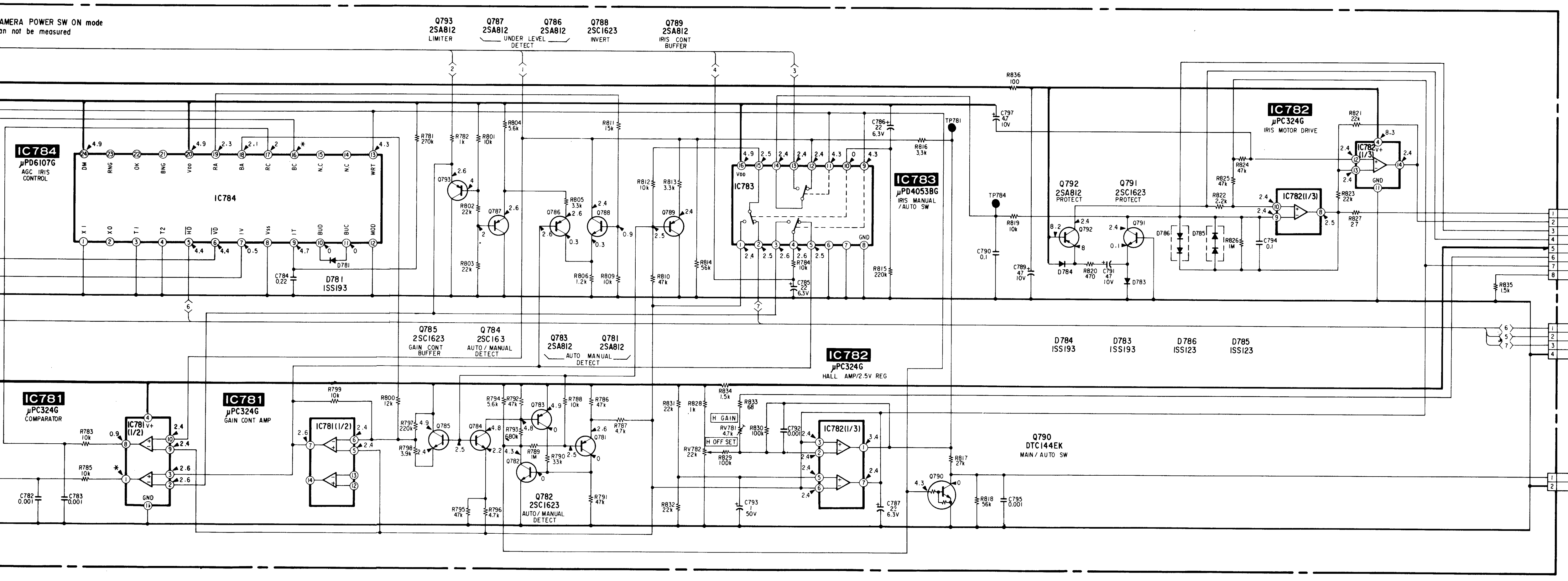
no mark : CAMERA POWER SW ON mode
＊: can not be measured

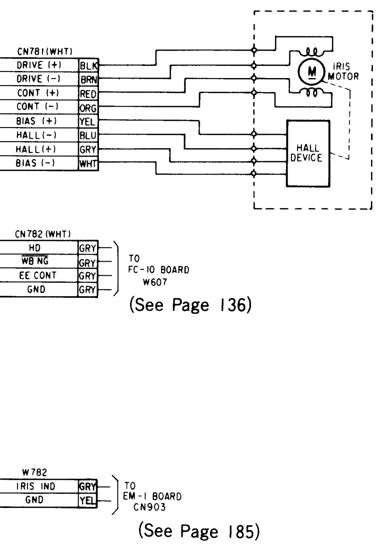
AW-3 (AUTO WHITE BALANCE), AT-5 (WHITE BALANCE, IRIS, AGC DETECTION), AS-13 (WHITE BALANCE SENSOR), AI-1 (AGC, IRIS CONTROL) SCHEMATIC DIAGRAM

– Ref. No. AW-3, AT-5 BOARDS: 3000 series, AI-1 BOARD: 4000 series, AS-13 BOARD: 5000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
AW-3 BOARD no mark : CAMERA POWER SW ON mode
IC701 CXD1073Q AUTO WHITE BALANCE
IC702 μPD4053BG BLANKING, R/B ID
Q702 2SA812 BLANKING
D701 1S2837
Q701 DTA144EK PWB SW
D704 1SS193
IC704 μPD4066BG CLAMP, HD LOGIC
D707 1SS193
IC703 μPD6107G WHITE BALANCE CONTROL
D708, D709 1SS119
D705 1SS193
D703 1SS193
D706 1SS193
TP701
TP702
AS-13 BOARD
S8701
WHITE BALANCE SENSOR
W701
W703
W702
CN702 (WHT)
CN703 (WHT)
CN704
TO ME-4 BOARD W706 (See Page 121)
TO ME-4 BOARD W705 (See Page 121)
AT-5 BOARD no mark : CAMERA POWER SW ON mode
CN852
CN851 (WHT)
TO ME-4 BOARD W707 (See Page 119)
Q851 2SA812-M5 BUFFER
Q852 DTA144EK INVERTER
Q853 2SA812-M5 INVERTER
AGC SET
LLA
WR OFF SET
WB OFF SET
AI-1 BOARD no mark : CAMERA POWER SW ON mode * : can not be measured
W781
IC784 μPD6107G AGC IRIS CONTROL
D789 1SS193
D782 1SS193
IC781 μPC324G COMPARATOR


AMERA POWER SW ON mode
IC851
CX20056
WHITE BALANCE DET IRIS, AGC
IC851
IRIS S
AGC S
LLS
R OFFSET
B OFFSET
DCR
GND
DCB
DCG
XVD
ID
XWP
B-G
R-G
LLL
IRIS DA
GND
IRIS BRK
IRIS DO
IRIS REF
Vcc4
PC3
PC4
Vcc1
PC2
PC1
GND
AGC REF
AGC DET
GND
AGC DO
Vcc3
AGC CONT
IRIS DI
AGC DI
BLK
CLP1
Vcc2
CG
CB
CR
G DET
RB DET
C1
CA
IRIS DET
AGC DET
R866 22k
R886 1M
C851 0.001
C852 0.001
C853 0.001
C854 0.1
C855 0.1
C856 0.1
C857 0.1
C858 0.1
C859 0.1
C860 0.001
R867 47k
Q852
DTA144EK
INVERTER
Q853
2SA812-M5
INVERTER
R858 22k
R860 22k
RV853 10k
RV854 10k
R857 22k
R859 22k
R861 22k
R862 22k
R863 22k
FF SET
WB OFF SET
Q854
DTC144EK
Q855
2SC1623-L5
WEIGHTING PULSE SW
Q856
2SA812-M5
Q857
2SA812-M5
Q858
2SC1623-L5
AGC WEIGHTING
AGC DETECT
Q859
2SA812-M5
BUFFER
Q860
2SA812-M5
IRIS WEIGHTING
Q861
2SC1623-L5
IRIS DETECT
Q862
2SA812-M5
BUFFER
R869 10k
R871 5.6k
R868 10k
R872 1k
R873 10k
R874 10k
R875 3.3k
R876 12k
R877 10k
R878 10k
R879 3.9k
R880 47k
R881 10k
R882 3.3k
R884 33k
R885 22k
R888 33k
C861 1 16V
C862 47 6.3V
C863 47 6.3V
C864 1
C866 0.0047
IRIS SET
RV855 10k

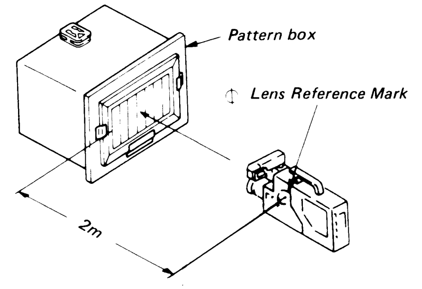

AMERA POWER SW ON mode
an not be measured
Q793
2SA812
LIMITER
Q787
2SA812
Q786
2SA812
UNDER LEVEL DETECT
Q788
2SC1623
INVERT
Q789
2SA812
IRIS CONT BUFFER
IC784
μPD6107G
AGC IRIS CONTROL
IC784
DM
RNG
OK
BNG
VDD
RA
BA
RC
BC
N.C
N.C
WRT
X1
XO
T1
T2
HD
VD
IV
Vss
IT
BUD
BUC
MOD
C784 0.22
D781
1SS193
R781 270k
R782 1k
R801 10k
R802 22k
R803 22k
R804 5.6k
R805 3.3k
R806 1.2k
R809 10k
R810 47k
R811 15k
R812 10k
R813 3.3k
R814 56k
R815 220k
R816 3.3k
R784 10k
C785 22 6.3V
C786 22 6.3V
IC783
μPD4053BG
IRIS MANUAL /AUTO SW
IC783
VDD
GND
TP781
TP784
C790 0.1
C789 47 10V
C797 4.7 10V
R836 100
R819 10k
Q792
2SA812
PROTECT
Q791
2SC1623
PROTECT
D784
R820 470
C791 47 10V
D783
D786
D785
R826 1M
C794 0.1
IC782
μPC324G
IRIS MOTOR DRIVE
IC782(1/3)
R821 22k
R822 2.2k
R823 22k
R824 47k
R825 47k
R827 27
R835 1.5k
GND
Q785
2SC1623
GAIN CONT BUFFER
Q784
2SC163
AUTO / MANUAL DETECT
Q783
2SA812
Q781
2SA812
AUTO MANUAL DETECT
D784
1SS193
D783
1SS193
D786
1SS123
D785
1SS123
IC782
μPC324G
HALL AMP/2.5V REG
IC781
μPC324G
COMPARATOR
IC781(1/2)
GND
R783 10k
R785 10k
C782 0.001
C783 0.001
IC781
μPC324G
GAIN CONT AMP
IC781(1/2)
R799 10k
R800 12k
R797 220k
R798 3.9k
R794 5.6k
R792 47k
R793 680k
R789 1M
R790 33k
R788 10k
R786 47k
R787 4.7k
R791 47k
R795 47k
R796 4.7k
Q782
2SC1623
AUTO/ MANUAL DETECT
R831 22k
R828 1k
R832 22k
R834 1.5k
R833 68
H GAIN
RV781 4.7k
H OFF SET
RV782 22k
R829 100k
R830 100k
C792 0.001
C793 1 50V
IC782(1/3)
C787 22 6.3V
Q790
DTC144EK
MAIN / AUTO SW
R817 27k
R818 56k
C795 0.001


CN781(WHT)
1 DRIVE (+) BLK
2 DRIVE (−) BRN
3 CONT (+) RED
4 CONT (−) ORG
5 BIAS (+) YEL
6 HALL(−) BLU
7 HALL(+) GRY
8 BIAS (−) WHT
M
IRIS MOTOR
HALL DEVICE
CN782 (WHT)
1 HD GRY
2 WB NG GRY
3 EE CONT GRY
4 GND GRY
TO FC-10 BOARD W607
(See Page 136)
W782
1 IRIS IND GRY
2 GND YEL
TO EM-1 BOARD CN903
(See Page 185)

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat. .
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ▭ : adjustment designation.
- ━ : B+ line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) The voltage value is a reference value between the grounding.
  (The tester used is the digital multimeter DC10MΩ)

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

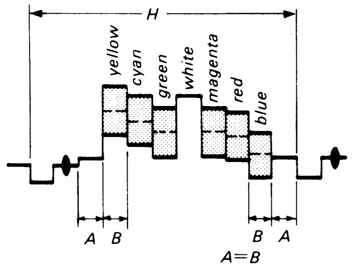

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A=B

Fig. a Camera output waveform of Pin ② of CN201 on VI-22 board

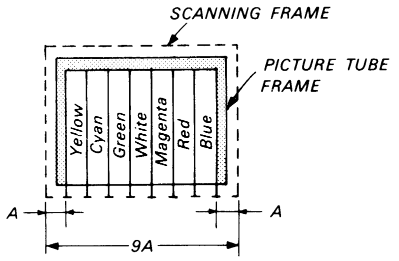

SCANNING FRAME
PICTURE TUBE FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

Fig. b Picture of TV monitor screen

CG-1 (TITLE, OCCURING DATE), FC-10 (CAMERA SYSTEM CONTROL

– Ref. No. CG-1 BOARD: 1000 series, FC-10 BOARD: 2000 series, TI-8 BOARD: 3000

Note (Printed Wiring Board):

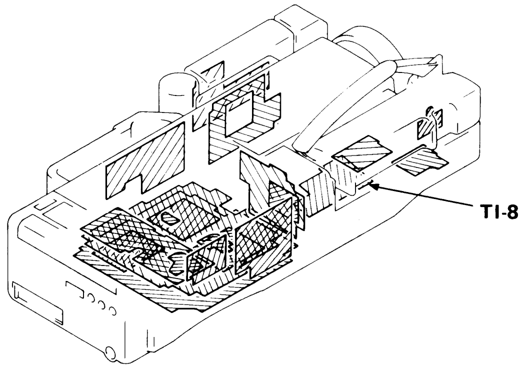
- ⊗ : **mark is through hole.**
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (FC-10: Q601, 602, 603, 604, 609, 612, 622, CG-1: Q671, TI-8: Q691) transistor with resistors.
  Refe to the FC-10, CG-1, TI-8 boards schematic diagram for digital transistor.

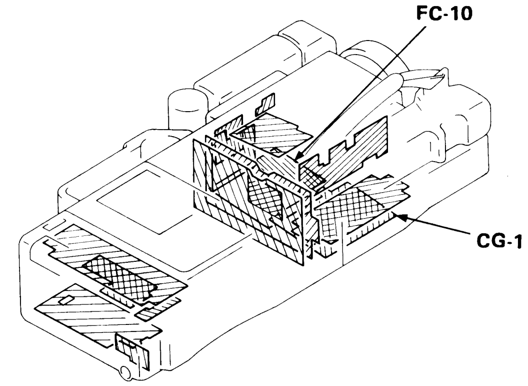
Note

Soldering side:	**Parts on the soldering side being seen from the soldering are stated.**
Component side:	**Parts on the component side being seen from the component are stated.**

Regarding color indication of patterns

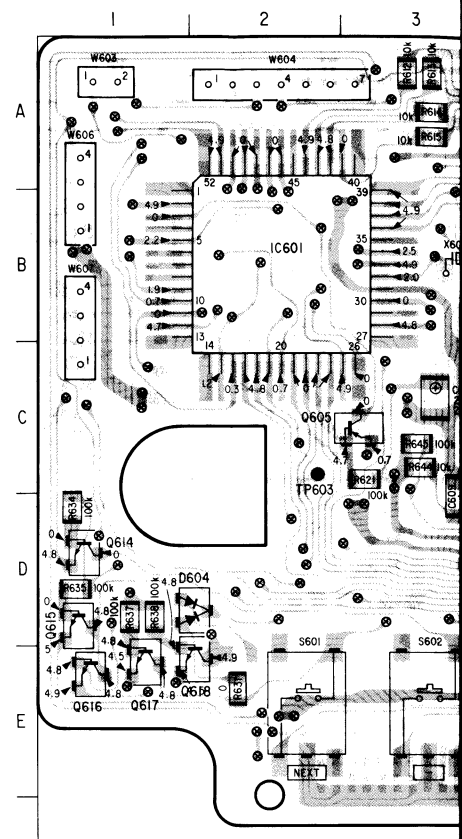
- * **Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).**
- * **Pattern being seen in the state of the rear surface side is indicated in green pattern.**



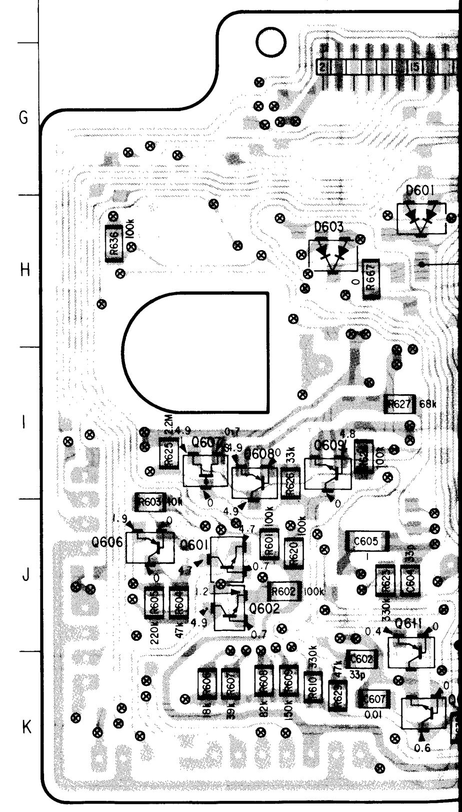


CT601	B - 3
D601	H - 3
D602	H - 5
D603	H - 2
D604	D - 1
D605	I - 5
IC601	B - 2
IC604	C - 4
IC605	B - 4
IC606	J - 5
Q601	J - 2
Q602	J - 2
Q603	H - 3
Q604	C - 5
Q605	C - 3
Q606	J - 1
Q607	I - 1
Q608	I - 2
Q609	I - 2
Q611	J - 3
Q612	K - 3
Q614	D - 1
Q615	D - 1
Q616	E - 1
Q617	E - 1
Q618	E - 1
Q619	D - 5
Q620	B - 4
Q621	B - 4
Q622	C - 5
RV601	C - 5
RV602	B - 5
TP601	A - 4
TP602	D - 5
TP603	C - 2
TP604	C - 5

FC-10 BOARD (COMPONENT SIDE) no mark : CAMERA


1
2
3
A
B
C
D
E
W603
W604
W606
W605
IC601
Q605
TP603
Q614
Q615
D604
Q616
Q617
Q618
S601
S602
NEXT

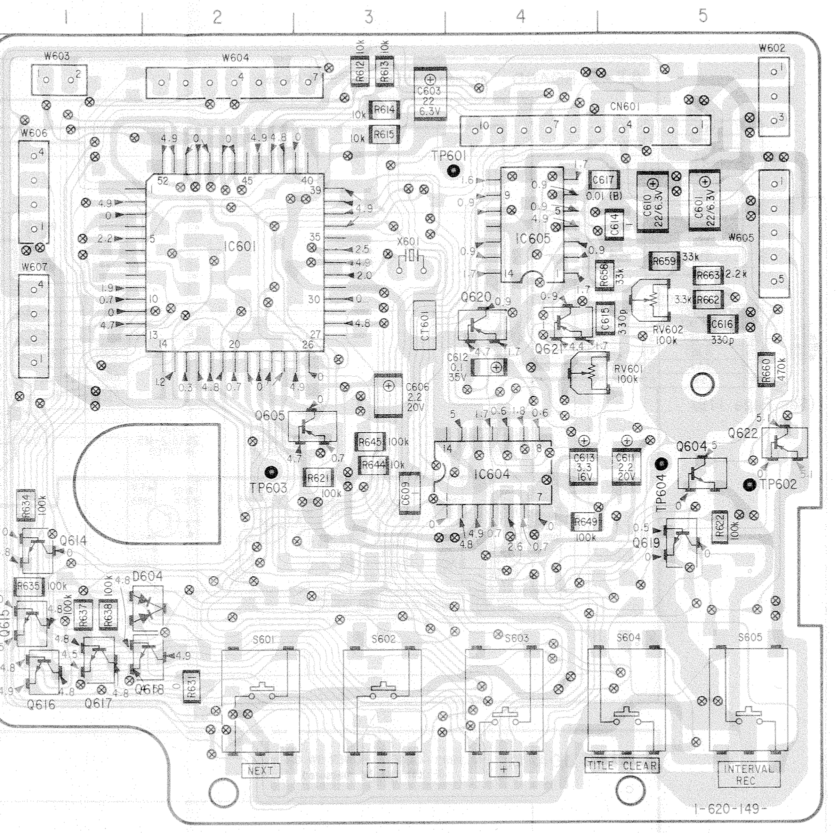
FC-10 BOARD (SOLDER SIDE) no mark : CAMERA


F
G
H
I
J
K
D601
D603
Q607
Q608
Q609
Q606
Q601
Q602
Q611
C605

10 (CAMERA SYSTEM CONTROL CAMERA FUNCTION KEY MATRIX), TI-8 (CAMERA FUNCTION KEY MATRIX) PRINTED WIRING BOARD

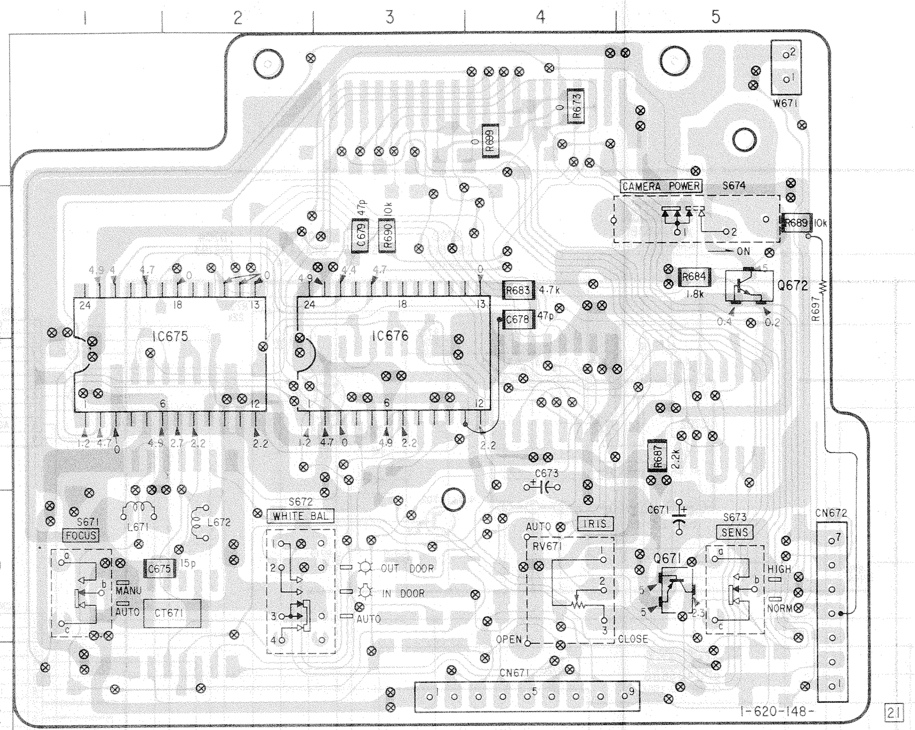
BOARD: 2000 series, TI-8 BOARD: 3000 series –

FC-10 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode


1
2
3
4
5
W603
W604
W602
W606
W607
W605
CN601
IC601
IC604
IC605
Q604
Q605
Q614
Q616
Q617
Q618
Q619
Q620
Q621
Q622
D604
TP601
TP602
TP603
RV601
RV602
X601
S601
S602
S603
S604
S605
NEXT
–
+
TITLE CLEAR
INTERVAL REC
1-620-149-
21

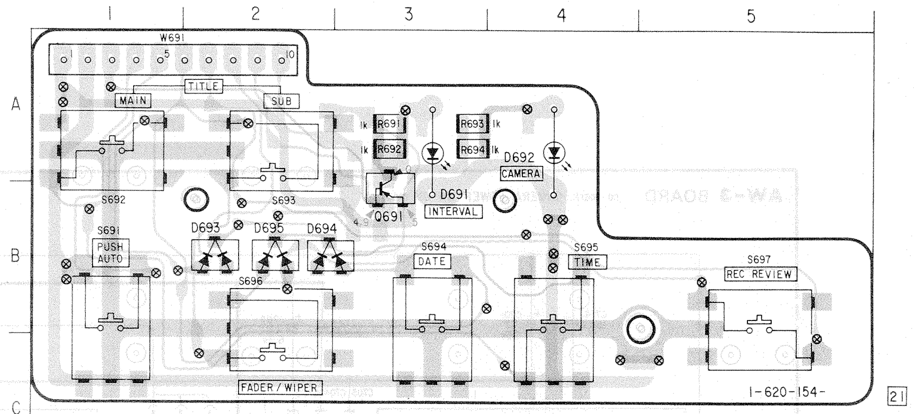
CT671	D - 1
IC671	H - 5
IC672	H - 4
IC673	G - 1
IC675	C - 1
IC676	C - 3
IC677	H - 1
IC678	H - 3
Q671	D - 5
Q672	B - 5
RV671	D - 4

CG-1 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode

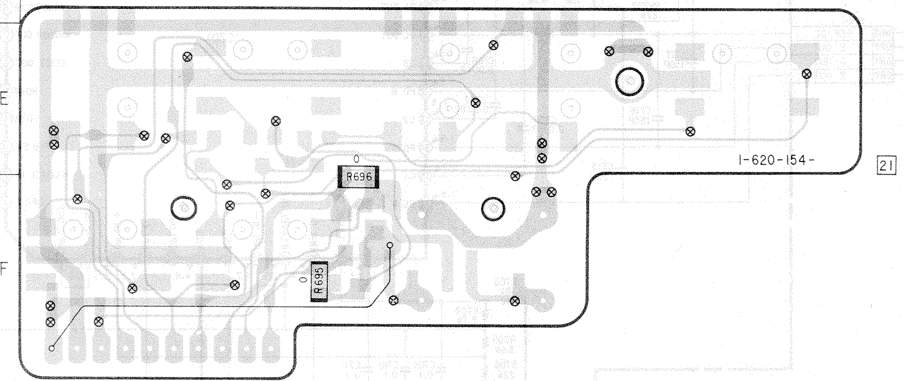

1
2
3
4
5
A
B
C
D
E
IC675
IC676
Q671
Q672
W671
CN671
CN672
CT671
RV671
S671
FOCUS
MANU
AUTO
S672
WHITE BAL
OUT DOOR
IN DOOR
AUTO
S673
SENS
HIGH
NORM
S674
CAMERA POWER
ON
IRIS
OPEN
CLOSE
1-620-148-
21

D691	A - 3
D692	A - 4
D693	B - 2
D694	B - 2
D695	B - 2
Q691	B - 3

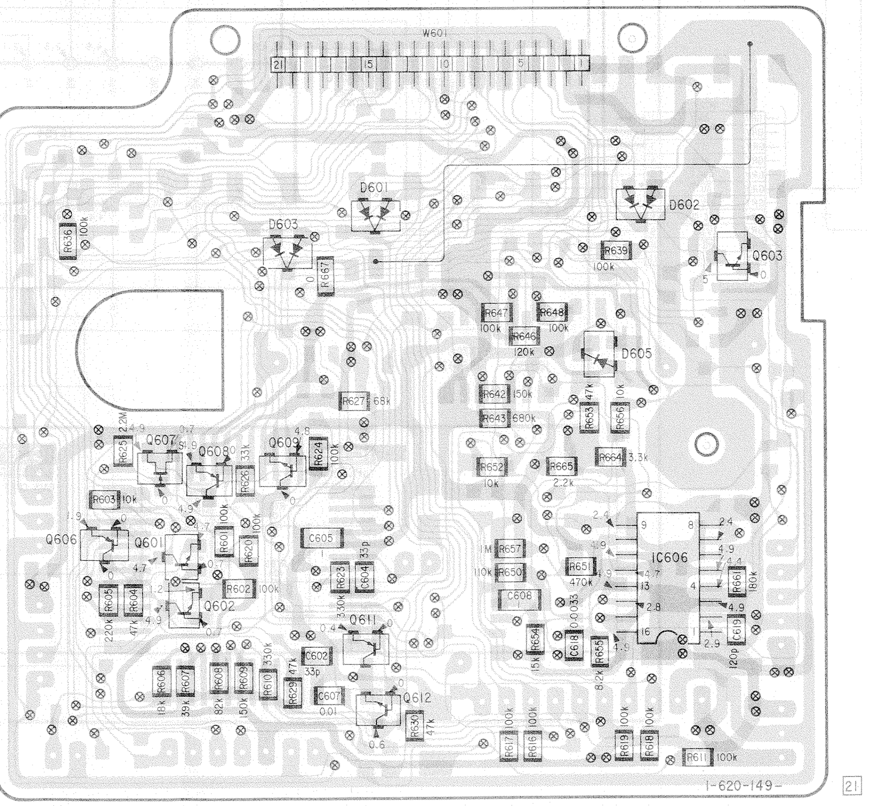
TI-8 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode


1
2
3
4
5
A
B
C
W691
TITLE
MAIN
SUB
S691
PUSH AUTO
S692
S693
S694
DATE
S695
TIME
S696
FADER / WIPER
S697
REC REVIEW
D691
INTERVAL
D692
CAMERA
D693
D694
D695
Q691
R691
R692
R693
R694
1-620-154-
21

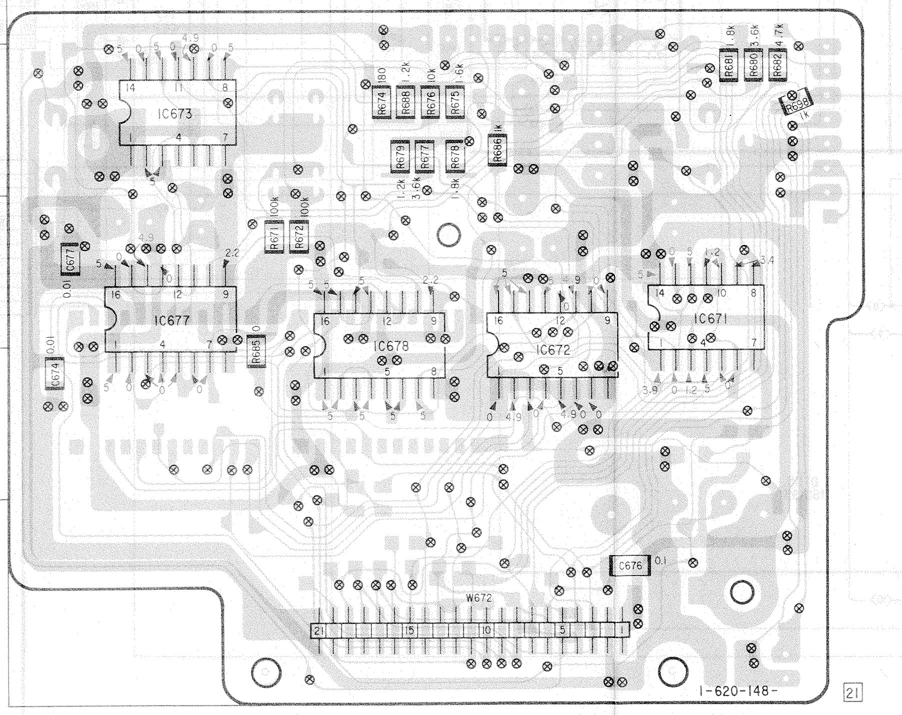
TI-8 BOARD (SOLDER SIDE)


D
E
F
R695
R696
1-620-154-
21

FC-10 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode

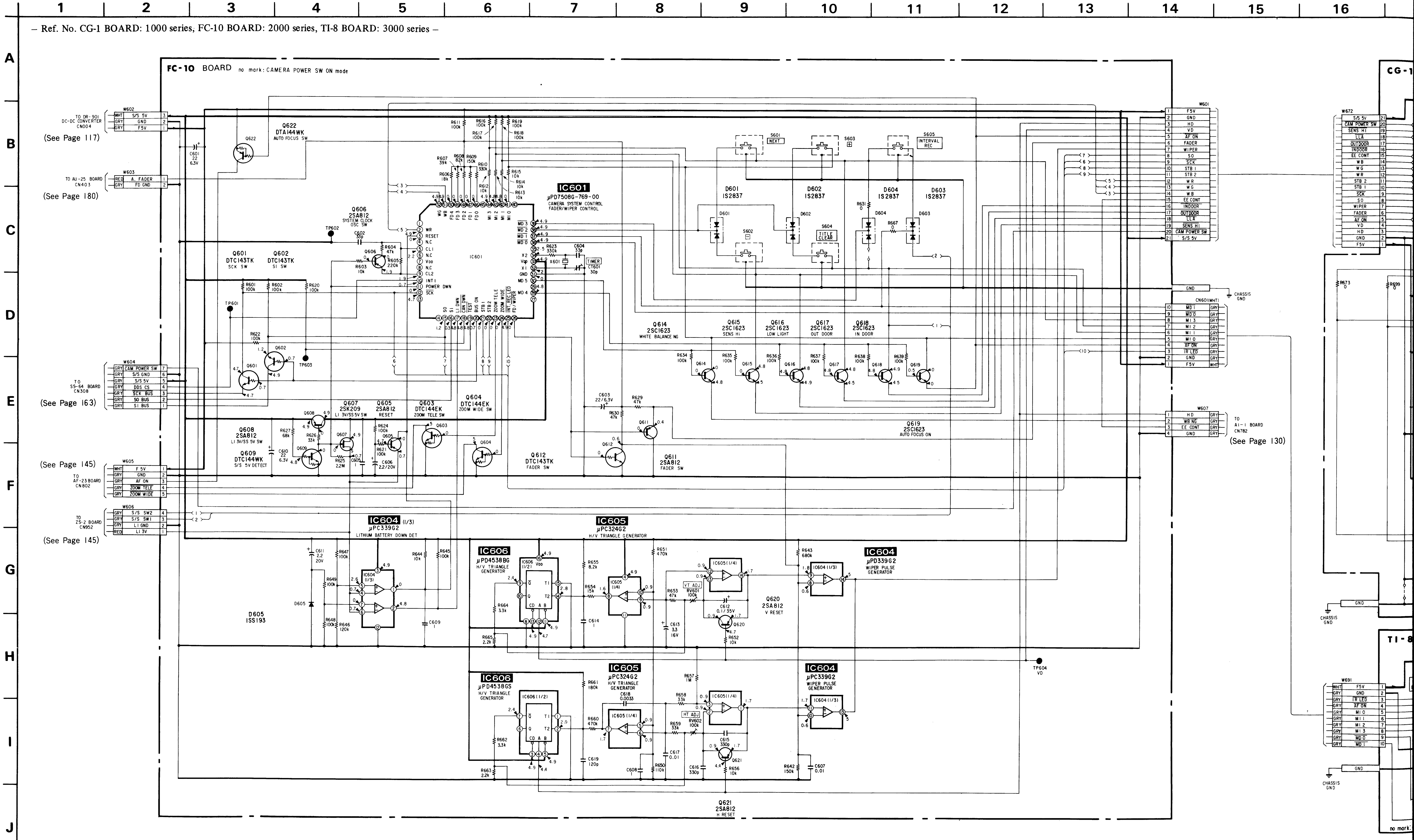

W601
D601
D602
D603
D605
Q601
Q602
Q603
Q606
Q607
Q608
Q609
Q611
Q612
IC606
1-620-149-
21

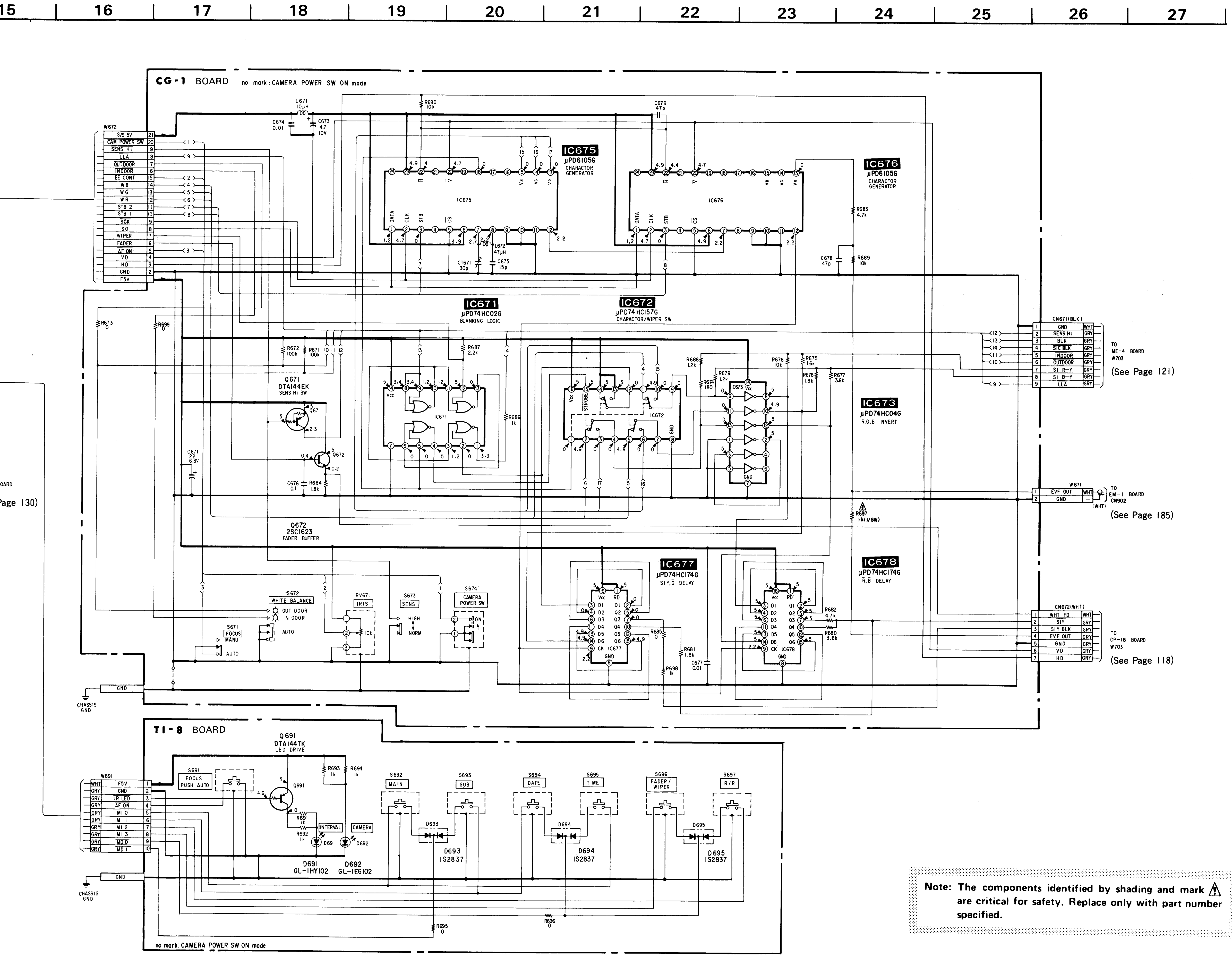
CG-1 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode


F
G
H
I
J
IC671
IC672
IC673
IC677
IC678
W672
1-620-148-
21

CG-1 (TITLE, OCCURING DATE), FC-10 (CAMERA SYSTEM CONTROL CAMERA FUNCTION KEY MATRIX), TI-8 (CAMERA FUNCTION KEY MATRIX) SCHEMATIC DIAGRAM

– Ref. No. CG-1 BOARD: 1000 series, FC-10 BOARD: 2000 series, TI-8 BOARD: 3000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
FC-10 BOARD no mark: CAMERA POWER SW ON mode
CG-1
TI-8
W602
S/S 5V
GND
F5V
TO DR-901 DC-DC CONVERTER CN004
(See Page 117)
W603
A. FADER
FD GND
TO AU-25 BOARD CN403
(See Page 180)
W604
CAM POWER SW
S/S GND
S/S 5V
DDS CS
SCK BUS
SO BUS
SI BUS
TO SS-64 BOARD CN308
(See Page 163)
W605
F 5V
GND
AF ON
ZOOM TELE
ZOOM WIDE
TO AF-23 BOARD CN802
(See Page 145)
W606
S/S SW2
S/S SW1
LI GND
LI 3V
TO ZS-2 BOARD CN952
(See Page 145)
Q622 DTA144WK AUTO FOCUS SW
C601 22 6.3V
IC601 μPD7508G-769-00 CAMERA SYSTEM CONTROL FADER/WIPER CONTROL
Q606 2SA812 SYSTEM CLOCK OSC SW
TP602
Q601 DTC143TK SCK SW
Q602 DTC143TK SI SW
TP601
TP603
X601
TIMER CT601 30p
Q607 2SK209 LI 3V/SS 5V SW
Q605 2SA812 RESET
Q603 DTC144EK ZOOM TELE SW
Q604 DTC144EK ZOOM WIDE SW
Q608 2SA812 LI 3V/SS 5V SW
Q609 DTC144WK S/S 5V DETECT
Q612 DTC143TK FADER SW
Q611 2SA812 FADER SW
Q614 2SC1623 WHITE BALANCE NG
Q615 2SC1623 SENS Hi
Q616 2SC1623 LOW LIGHT
Q617 2SC1623 OUT DOOR
Q618 2SC1623 IN DOOR
Q619 2SC1623 AUTO FOCUS ON
S601 NEXT
S602
S603
S604 TITLE CLEAR
S605 INTERVAL REC
D601 1S2837
D602 1S2837
D603 1S2837
D604 1S2837
W601
F5V
GND
HD
VD
AF ON
FADER
WIPER
SO
SCK
STB 1
STB 2
WR
WG
WB
EE CONT
INDOOR
OUTDOOR
LLA
SENS HI
CAM POWER SW
S/S 5V
CHASSIS GND
CN601(WHT)
MI 0
MD 0
MI 3
MI 2
MI 1
MI 0
AF ON
IR LED
W607
HD
WB NG
EE CONT
TO AI-1 BOARD CN782
(See Page 130)
W672
IC604 (1/3) μPC339G2 LITHIUM BATTERY DOWN DET
D605 1SS193
IC605 μPC324G2 H/V TRIANGLE GENERATOR
IC606 μPD4538BG H/V TRIANGLE GENERATOR
IC604 μPD339G2 WIPER PULSE GENERATOR
VT ADJ RV601 100k
Q620 2SA812 V RESET
TP604 VD
IC606 μPD4538BS H/V TRIANGLE GENERATOR
IC605 μPC324G2 H/V TRIANGLE GENERATOR
HT ADJ RV602 100k
IC604 μPC339G2 WIPER PULSE GENERATOR
Q621 2SA812 H RESET
W691
no mark:

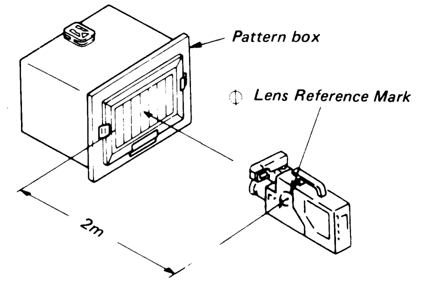

15
16
17
18
19
20
21
22
23
24
25
26
27
CG-1 BOARD no mark: CAMERA POWER SW ON mode
W672
S/S 5V
CAM POWER SW
SENS HI
LLA
OUTDOOR
INDOOR
EE CONT
WB
WG
WR
STB 2
STB 1
SCK
SO
WIPER
FADER
AF ON
VD
HD
GND
F5V
L671 10μH
C674 0.01
C673 4.7 10V
R690 10k
C679 47p
IC675 μPD6105G CHARACTOR GENERATOR
IC676 μPD6105G CHARACTOR GENERATOR
CT671 30p
L672 47μH
C675 15p
R683 4.7k
C678 47p
R689 10k
IC671 μPD74HC02G BLANKING LOGIC
IC672 μPD74HC157G CHARACTOR/WIPER SW
R673 0
R699 0
R672 100k
R671 100k
R687 2.2k
R686 1k
Q671 DTA144EK SENS HI SW
Q672 2SC1623 FADER BUFFER
C671 22 6.3V
C676 0.1
R684 1.8k
R688 1.2k
R674 180
R679 1.2k
R676 10k
R675 1.6k
R678 1.8k
R677 3.6k
IC673 μPD74HC04G R.G.B INVERT
CN671(BLK)
GND
SENS HI
BLK
SIC BLK
INDOOR
OUTDOOR
SI R-Y
SI B-Y
LLA
TO ME-4 BOARD W703
(See Page 121)
W671
EVF OUT
GND
TO EM-1 BOARD CN902
(See Page 185)
R697 1k(1/8W)
IC677 μPD74HC174G S1Y, Ḡ DELAY
IC678 μPD74HC174G R̄.B̄ DELAY
R685 0
R681 1.8k
R698 1k
C677 0.01
R682 4.7k
R680 3.6k
CN672(WHT)
WHT FD
S1Y
S1Y BLK
EVF OUT
GND
VD
HD
TO CP-18 BOARD W703
(See Page 118)
S672 WHITE BALANCE
OUT DOOR
IN DOOR
AUTO
S671 FOCUS
MANU
AUTO
RV671 IRIS
10k
S673 SENS
HIGH
NORM
S674 CAMERA POWER SW
ON
GND
CHASSIS GND
TI-8 BOARD
Q691 DTA144TK LED DRIVE
W691
F5V
GND
TR LED
AF ON
MI 0
MI 1
MI 2
MI 3
MD 0
MD 1
S691 FOCUS PUSH AUTO
R693 1k
R694 1k
R691 1k
R692 1k
INTERVAL
CAMERA
D691
D692
D691 GL-1HY102
D692 GL-1EG102
S692 MAIN
S693 SUB
S694 DATE
S695 TIME
S696 FADER/WIPER
S697 R/R
D693 1S2837
D694 1S2837
D695 1S2837
R695 0
R696 0
no mark: CAMERA POWER SW ON mode
OARD
Page 130)

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

When indicating parts by reference number, please include the board name.

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

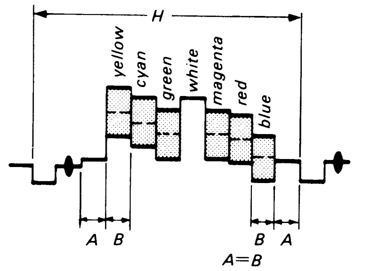

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A=B

Fig. a Camera output waveform of Pin② of CN201 on VI-22 board

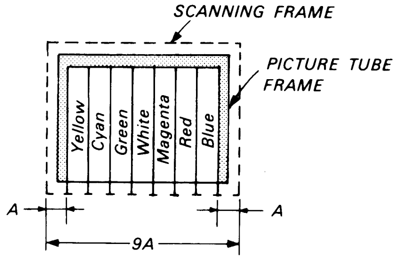

SCANNING FRAME
PICTURE TUBE FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

Fig. b Picture of TV monitor screen

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ░ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (AF-23: Q802, 811) transistor with resistors. Refer to the AF-23 board schematic diagram for digital transistor.

Note

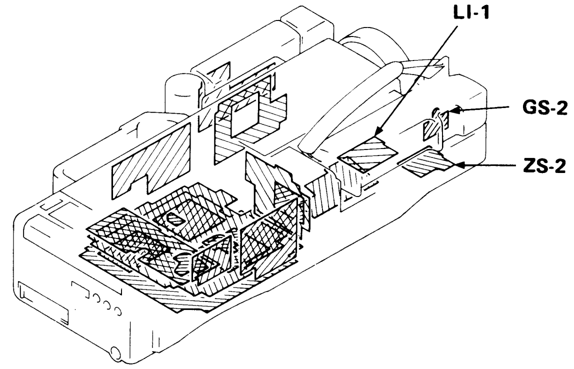
Soldering side: Parts on the soldering side being seen from the soldering are stated.

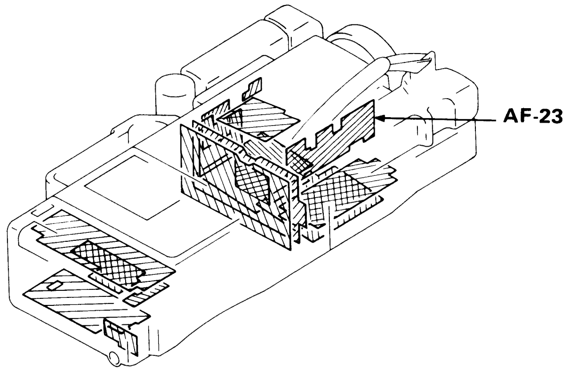
Component side: Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

* Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).

* Pattern being seen in the state of the rear surface side is indicated in green pattern.

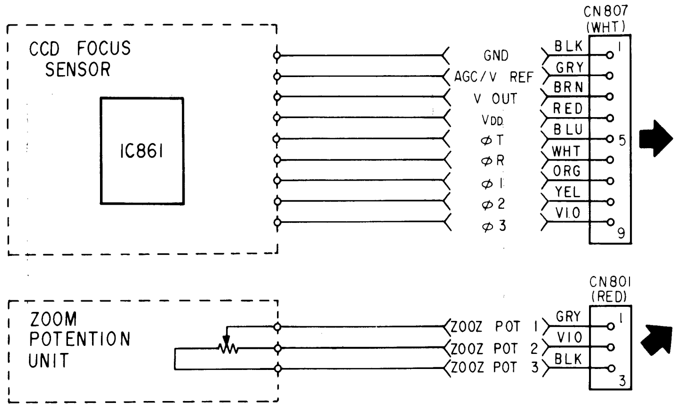




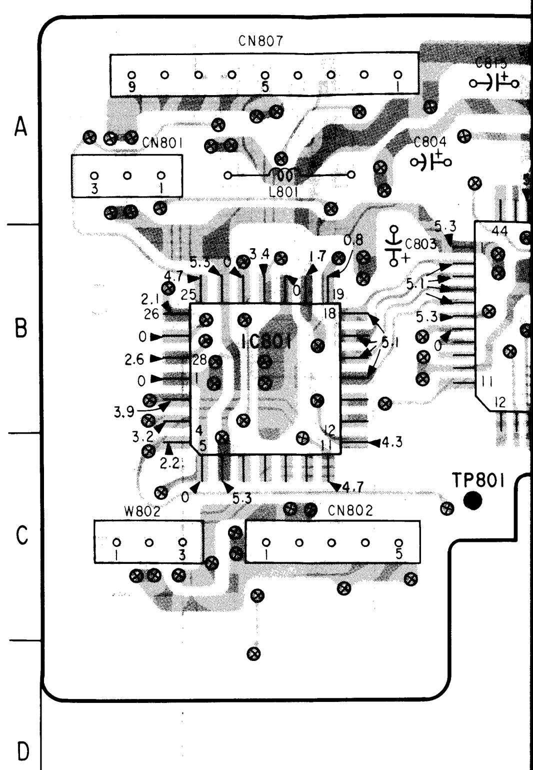
AF-23 (AUTO FOCUS, ZOOM MOTOR DRIVE), ZS-2 (START/STOP SWITCH, ZOOM SWITCH, RELAY), LI-1 (LITHIUM BATTERY ST

– Ref. No. AF-23, ZS-2 BOARDS: 1000 series, GS-2 BOARD: 2000 series, LI-1 BOARD: 6000 series –

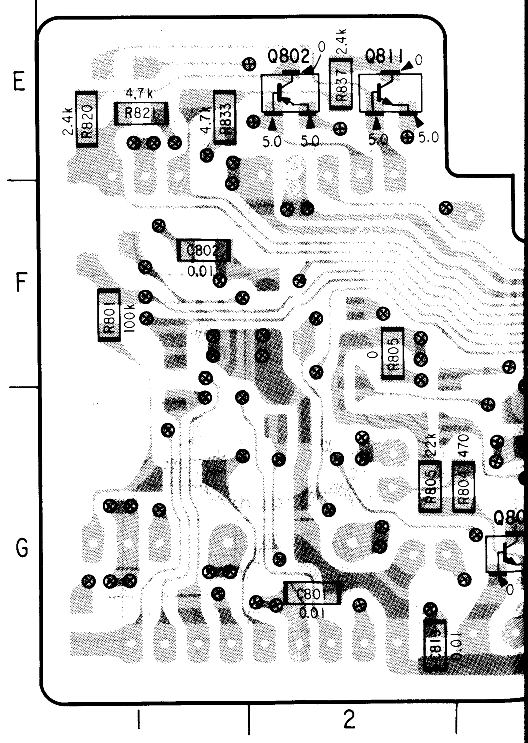
IC801	B-2
IC802	B-3
IC803	B-5
IC804	E-7
Q801	G-3
Q802	E-2
Q803	G-7
Q804	G-7
Q805	G-7
Q806	G-7
Q807	G-7
Q808	G-6
Q809	G-6
Q810	G-6
Q811	E-2
RV801	C-4
RV802	C-4
RV803	C-4


CCD FOCUS
SENSOR
IC861
GND
AGC/V REF
V OUT
VDD
φT
φR
φ1
φ2
φ3
CN807
(WHT)
BLK
GRY
BRN
RED
BLU
WHT
ORG
YEL
VIO
1
5
9
ZOOM
POTENTION
UNIT
ZOOZ POT 1
ZOOZ POT 2
ZOOZ POT 3
CN801
(RED)
GRY
VIO
BLK
1
3

AF-23 BOARD (COMPONENT SIDE) no mar

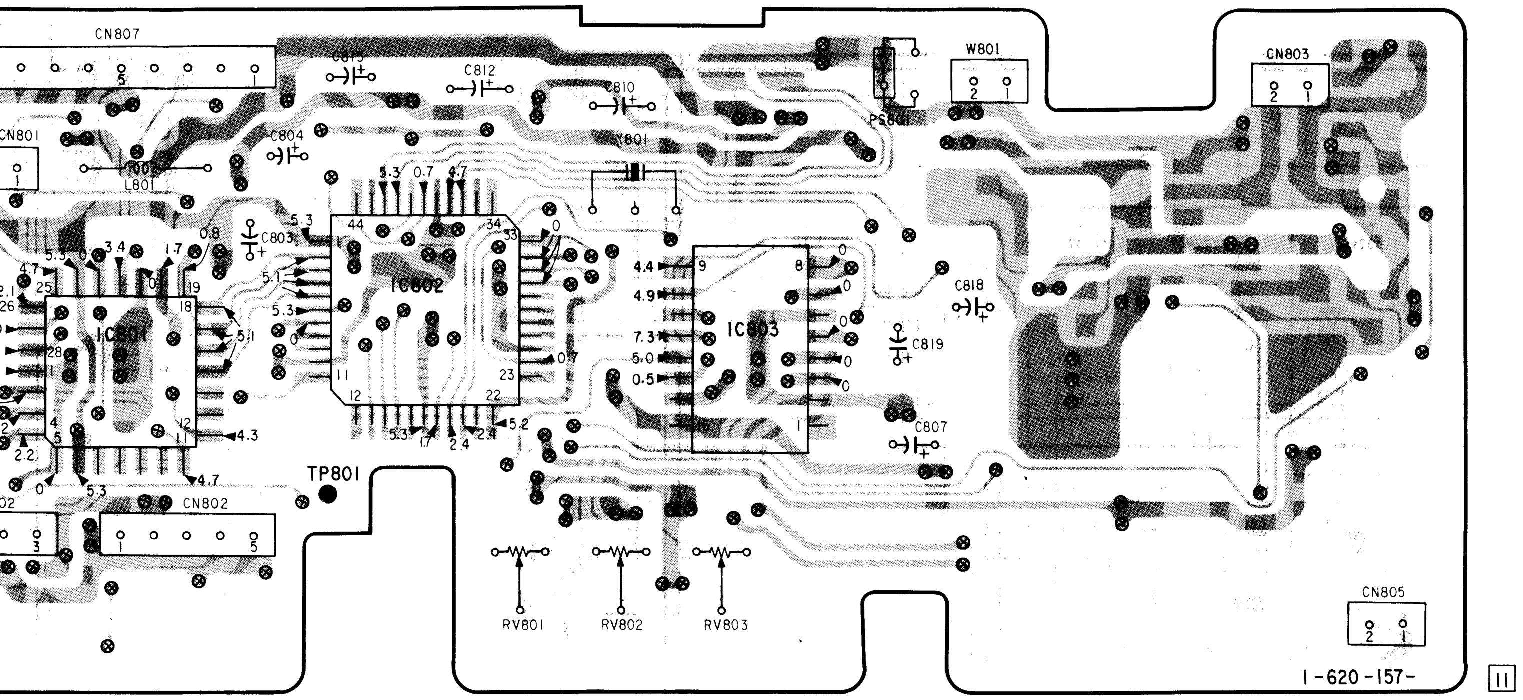

A
B
C
D
CN807
CN801
L801
C804
C803
IC801
TP801
W802
CN802
4.7
5.3
3.4
1.7
0.8
2.1
26
25
0
2.6
28
3.9
3.2
2.2
4.3
4.7
5.1
44
19
18
12
11

AF-23 BOARD (SOLDER SIDE) no mark : C

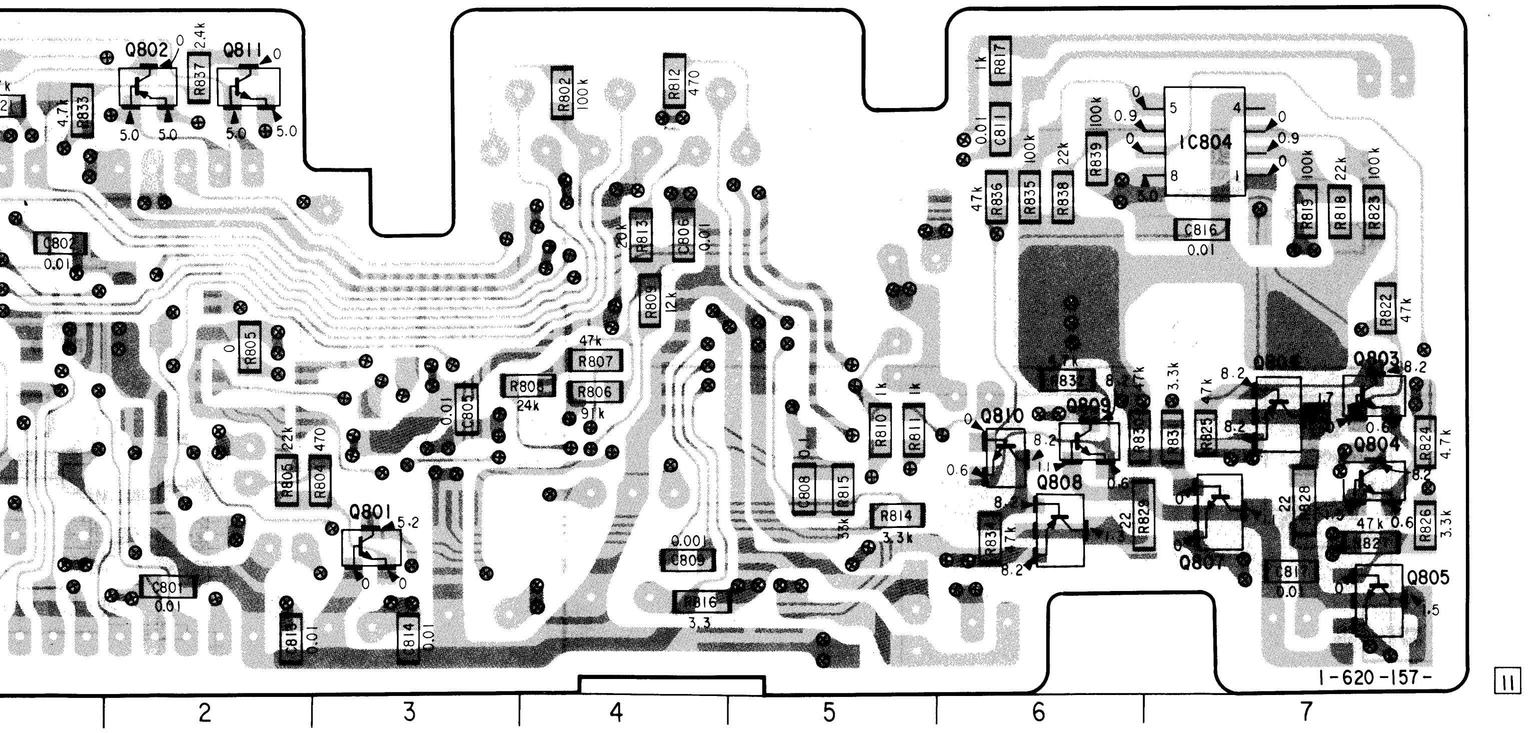

E
F
G
1
2
Q802
Q811
R820
2.4k
R821
4.7k
R833
4.7k
R837
2.4k
5.0
C802
0.01
R801
100k
R805
R805
22k
R804
470
C801
0.01
C818
0.01

Y), LI-1 (LITHIUM BATTERY STORAGE), GS-2 (START/STOP SWITCH) PRINTED WIRING BOARD

BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode

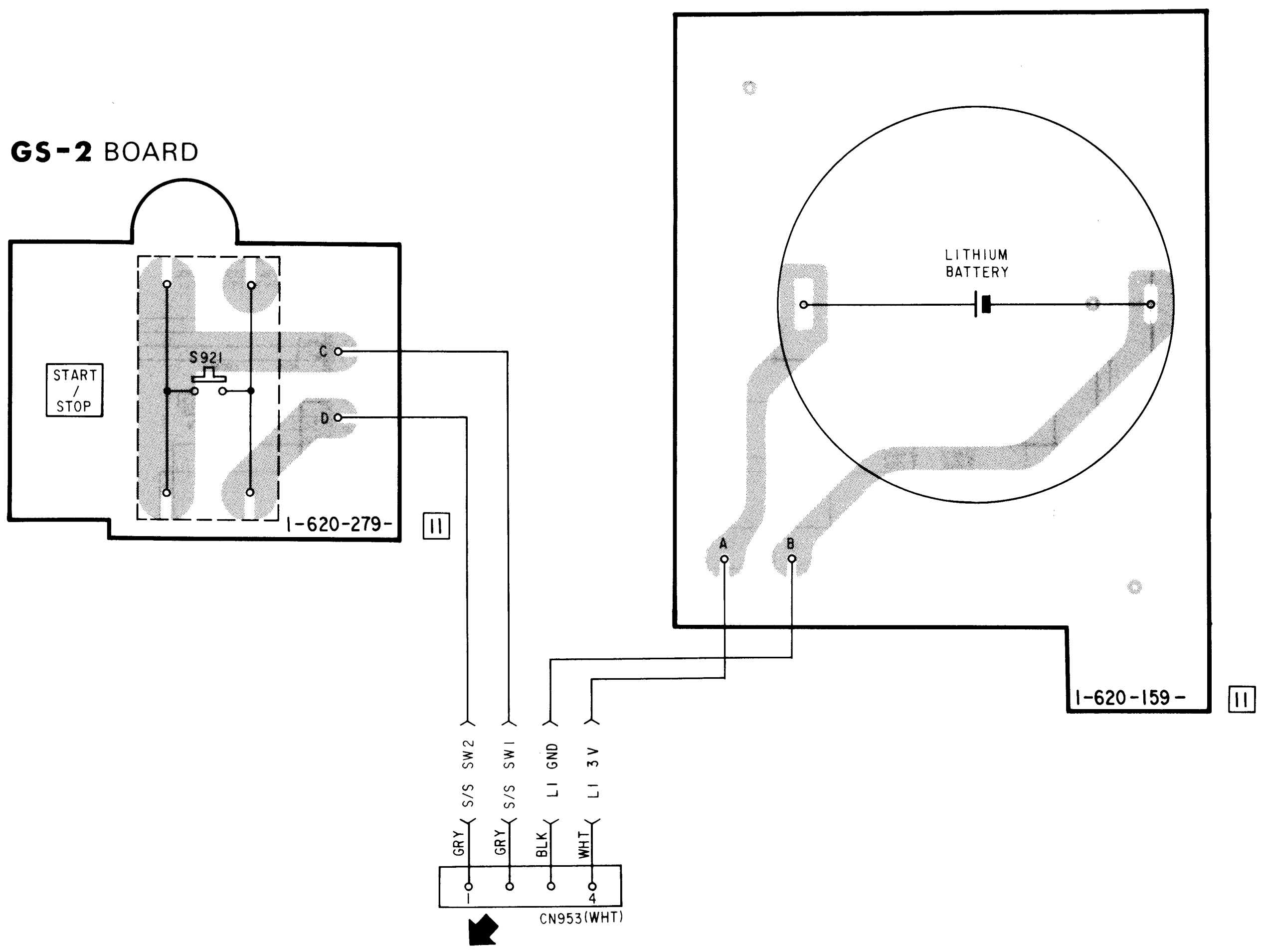

CN807
CN801
L801
C815
C812
C810
C804
C803
X801
PS801
W801
CN803
IC801
IC802
IC803
C818
C819
C807
TP801
CN802
RV801
RV802
RV803
CN805
1-620-157-
11

BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode

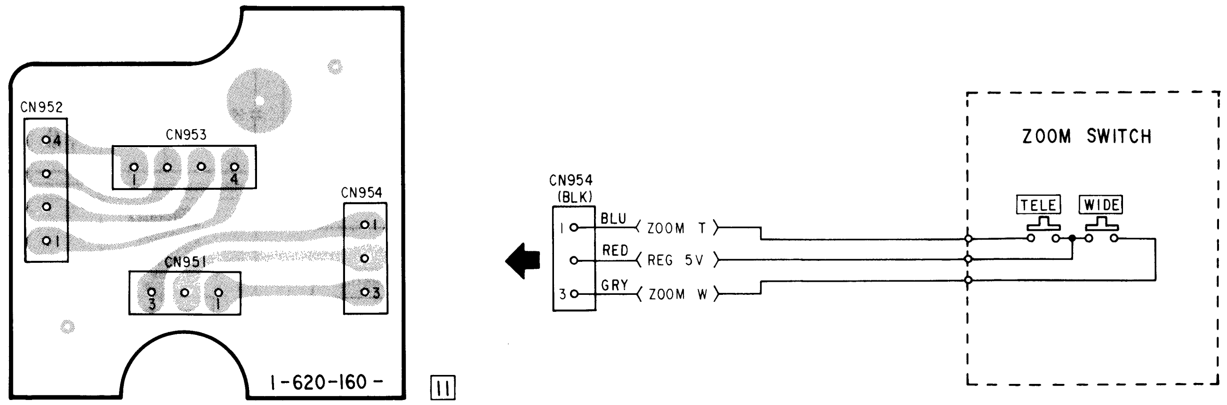

Q802
Q811
R837
R833
R802
100k
R812
470
R817
1k
C811
0.01
R836
47k
R835
100k
R838
22k
R839
100k
IC804
C816
0.01
R819
100k
R818
22k
R823
100k
C802
0.01
R813
R806
R809
12k
R805
R807
47k
R808
24k
R806
9.1k
R822
47k
Q806
Q803
Q810
Q809
Q808
Q804
Q807
Q805
R810
R811
R814
3.3k
R815
C808
R816
3.3
C809
0.001
R805
R804
470
Q801
C801
0.01
R824
4.7k
R826
3.3k
1-620-157-
11
2
3
4
5
6
7

GS-2 BOARD

LI-1 BOARD

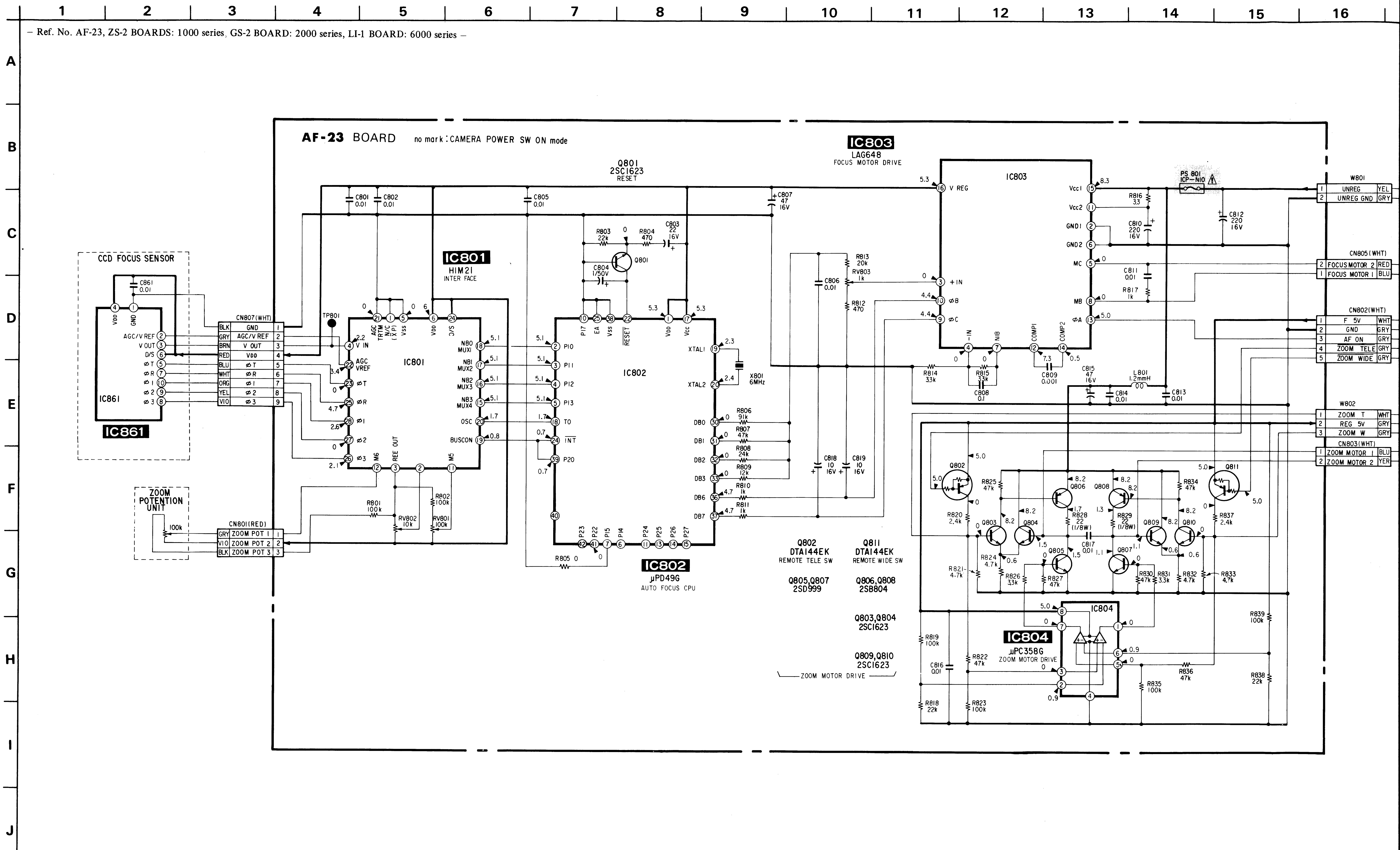

START / STOP
S921
C
D
1-620-279-
11
LITHIUM BATTERY
A
B
1-620-159-
11
S/S SW2
S/S SW1
LI GND
LI 3V
GRY
GRY
BLK
WHT
1
4
CN953(WHT)

ZS-2 BOARD

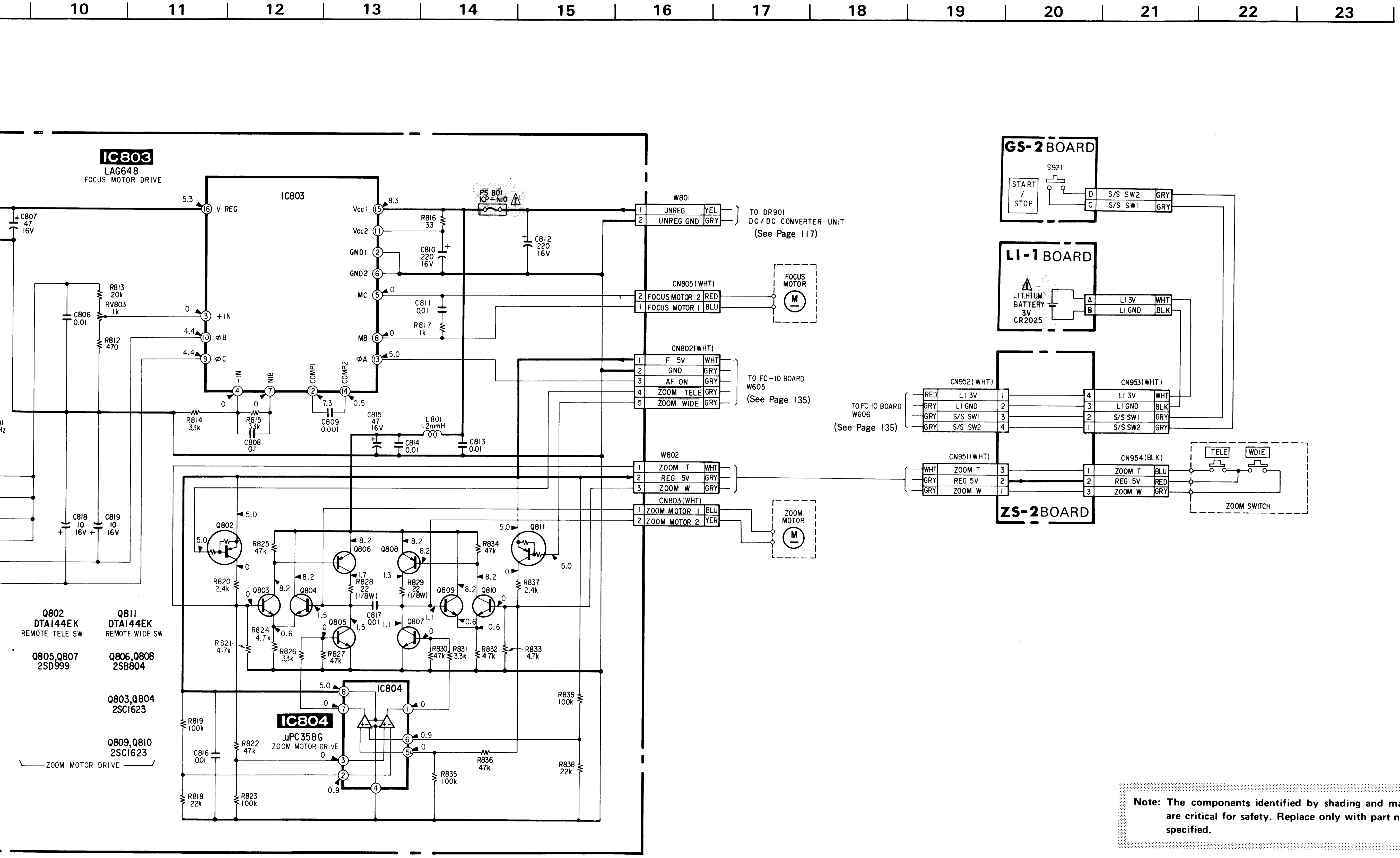

CN952
4
1
CN953
1
4
CN954
1
3
CN951
3
1
1-620-160-
11
CN954 (BLK)
1 BLU ZOOM T
RED REG 5V
3 GRY ZOOM W
ZOOM SWITCH
TELE
WIDE

AF-23 (AUTO FOCUS, ZOOM MOTOR DRIVE), ZS-2 (START/STOP SWITCH, ZOOM SWITCH, RELAY), L1-1 (LITHIUM BATTERY STORAGE), GS-2 (START/STOP SWITCH) SCHEMATIC DIAGRAM

– Ref. No. AF-23, ZS-2 BOARDS: 1000 series, GS-2 BOARD: 2000 series, LI-1 BOARD: 6000 series –


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
AF-23 BOARD
no mark : CAMERA POWER SW ON mode
CCD FOCUS SENSOR
IC861
C861 0.01
VDD GND AGC/V REF V OUT D/S φT φR φ1 φ2 φ3
CN807(WHT)
BLK GND 1
GRY AGC/V REF 2
BRN V OUT 3
RED VDD 4
BLU φT 5
WHT φR 6
ORG φ1 7
YEL φ2 8
VIO φ3 9
ZOOM POTENTION UNIT
100k
CN801(RED)
GRY ZOOM POT 1 1
VIO ZOOM POT 2 2
BLK ZOOM POT 3 3
TP801
IC801
HIM21
INTER FACE
V IN AGC VREF φT φR φ1 φ2 φ3
AGC TRTM N/C (XP) VSS VDD D/S
NB0 MUXI NB1 MUX1 NB2 MUX2 NB3 MUX3 MUX4 OSC BUSCON
M6 REE OUT M5
C801 0.01 C802 0.01 C805 0.01
R801 100k RV802 10k R802 100k RV801 100k
Q801 2SC1623 RESET
R803 22k R804 470 C803 22 16V C804 1/50V
IC802
μPD49G
AUTO FOCUS CPU
P17 EA VSS RESET VDD Vcc
P10 P11 P12 P13 T0 INT P20
XTAL1 XTAL2
X801 6MHz
DB0 DB1 DB2 DB3 DB6 DB7
R806 91k R807 47k R808 24k R809 12k R810 1k R811 1k
P23 P22 P15 P14 P24 P25 P26 P27
R805 0
C807 47 16V
IC803
LAG648
FOCUS MOTOR DRIVE
V REG Vcc1 Vcc2 GND1 GND2 MC MB φA +IN φB φC −IN NIB COMP1 COMP2
R813 20k RV803 1k R812 470 C806 0.01
C818 10 16V C819 10 16V
R814 33k R815 33k C808 0.1 C809 0.001
C815 47 16V C814 0.01 L801 1.2mH C813 0.01
R816 3.3 C810 220 16V C811 .001 R817 1k
PS 801 ICP-N10
C812 220 16V
W801
1 UNREG YEL
2 UNREG GND GRY
CN805(WHT)
2 FOCUS MOTOR 2 RED
1 FOCUS MOTOR 1 BLU
CN802(WHT)
1 F 5V WHT
2 GND GRY
3 AF ON GRY
4 ZOOM TELE GRY
5 ZOOM WIDE GRY
W802
1 ZOOM T WHT
2 REG 5V GRY
3 ZOOM W GRY
CN803(WHT)
1 ZOOM MOTOR 1 BLU
2 ZOOM MOTOR 2 YER
Q802 DTA144EK REMOTE TELE SW
Q811 DTA144EK REMOTE WIDE SW
Q805,Q807 2SD999
Q806,Q808 2SB804
Q803,Q804 2SC1623
Q809,Q810 2SC1623
ZOOM MOTOR DRIVE
Q802 Q803 Q804 Q805 Q806 Q807 Q808 Q809 Q810 Q811
R820 2.4k R821 4.7k R824 4.7k R825 47k R826 33k R827 47k R828 22 (1/8W) R829 22 (1/8W)
C817 0.01
R830 47k R831 3.3k R832 4.7k R833 4.7k R834 47k R837 2.4k
IC804
μPC358G
ZOOM MOTOR DRIVE
R819 100k C816 0.01 R818 22k R822 47k R823 100k
R835 100k R836 47k R838 22k R839 100k

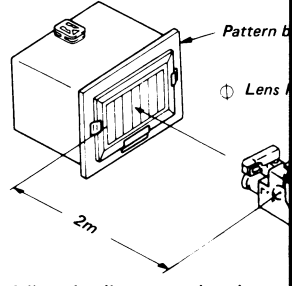
E), GS-2 (START/STOP SWITCH) SCHEMATIC DIAGRAM


10
11
12
13
14
15
16
17
18
19
20
21
22
23
IC803
LAG648
FOCUS MOTOR DRIVE
IC803
V REG
Vcc1
Vcc2
GND1
GND2
MC
MB
+IN
φB
φC
φA
-IN
NIB
COMP1
COMP2
C807 47 16V
C806 0.01
R813 20k
RV803 1k
R812 470
R814 33k
R815 33k
C808 0.1
C809 0.001
R816 33
C810 220 16V
C811 .001
R817 1k
PS 801 ICP-N10
C812 220 16V
C815 47 16V
C814 0.01
L801 1.2mmH
C813 0.01
W801
UNREG
UNREG GND
YEL
GRY
TO DR901 DC/DC CONVERTER UNIT
(See Page 117)
CN805(WHT)
FOCUS MOTOR 2
FOCUS MOTOR 1
RED
BLU
FOCUS MOTOR
CN802(WHT)
F 5V
GND
AF ON
ZOOM TELE
ZOOM WIDE
TO FC-10 BOARD W605
(See Page 135)
W802
ZOOM T
REG 5V
ZOOM W
CN803(WHT)
ZOOM MOTOR 1
ZOOM MOTOR 2
YER
ZOOM MOTOR
Q802
Q803
Q804
Q805
Q806
Q807
Q808
Q809
Q810
Q811
R825 47k
R820 2.4k
R824 4.7k
R821 4.7k
R826 33k
R827 47k
R828 22 (1/8W)
R829 22 (1/8W)
C817 .001
R830 47k
R831 3.3k
R832 4.7k
R833 4.7k
R834 47k
R837 2.4k
C818 10 16V
C819 10 16V
Q802 DTA144EK REMOTE TELE SW
Q811 DTA144EK REMOTE WIDE SW
Q805,Q807 2SD999
Q806,Q808 2SB804
Q803,Q804 2SC1623
Q809,Q810 2SC1623
ZOOM MOTOR DRIVE
IC804
μPC358G
ZOOM MOTOR DRIVE
R819 100k
C816 .001
R818 22k
R822 47k
R823 100k
R835 100k
R836 47k
R839 100k
R838 22k
GS-2 BOARD
S921
START / STOP
S/S SW2
S/S SW1
LI-1 BOARD
LITHIUM BATTERY 3V CR2025
LI 3V
LI GND
WHT
BLK
CN952(WHT)
CN953(WHT)
TO FC-10 BOARD W606
(See Page 135)
LI 3V
LI GND
S/S SW1
S/S SW2
CN951(WHT)
CN954(BLK)
ZOOM T
REG 5V
ZOOM W
ZS-2 BOARD
TELE
WDIE
ZOOM SWITCH

Note (Schematic Diagram):

- Caution to be exercised when re
  Do not reuse the removed c
  components.
  Caution should be taken as the ne
  capacitor is weak toward heat. .
- All capacitors which resistance p
  indicated except for chemicals an
  μF (p is pF).
- All resistors are in ohms, 1/10W i
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resi
  curve B, which definition is omi
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- Measuring conditions of voltage
  (1) The subject is color bar of
  (2) The voltage value is a refe
  grounding.
  (The tester used is the digi

1. Connection


Pattern b
Lens
2m

2. Adjust the distance so that the out a and the Fig. b can be obtain.

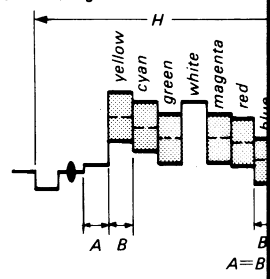


Fig. a Camera output waveform of Pin ② of CN201 on VI-22 bo

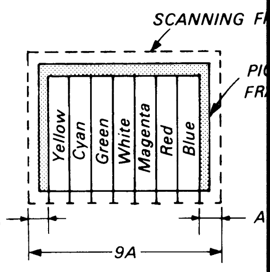
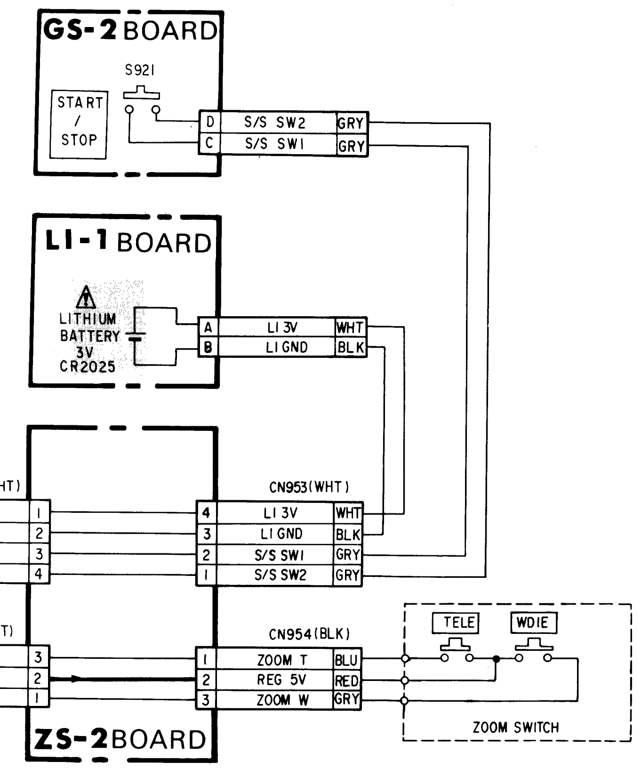

SCANNING F
PI
FR
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
9A

Fig. b Picture of TV monit

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.


GS-2 BOARD
S921
START / STOP
D S/S SW2 GRY
C S/S SW1 GRY
LI-1 BOARD
LITHIUM BATTERY 3V CR2025
A LI 3V WHT
B LI GND BLK
HT)
1
2
3
4
CN953(WHT)
4 LI 3V WHT
3 LI GND BLK
2 S/S SW1 GRY
1 S/S SW2 GRY
T)
3
2
1
CN954(BLK)
1 ZOOM T BLU
2 REG 5V RED
3 ZOOM W GRY
TELE
WDIE
ZOOM SWITCH
ZS-2 BOARD

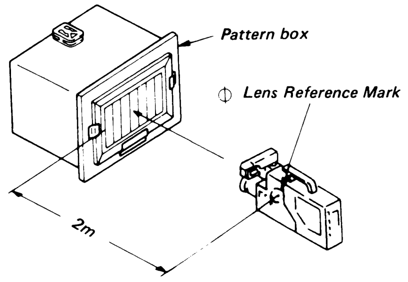
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat..
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ▭ : panel designation.
- ▭ : adjustment designation.
- ▬ : B+ line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) The voltage value is a reference value between the grounding.
  (The tester used is the digital multimeter DC10MΩ)

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

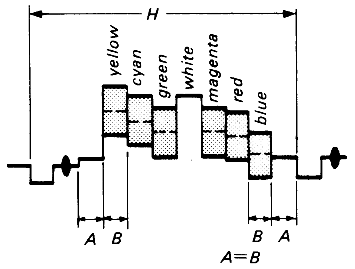

H
yellow
cyan
green
white
magenta
red
blue
A B
B A
A=B

Fig. a Camera output waveform of Pin②of CN201 on VI-22 board

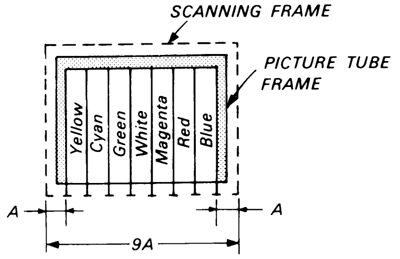
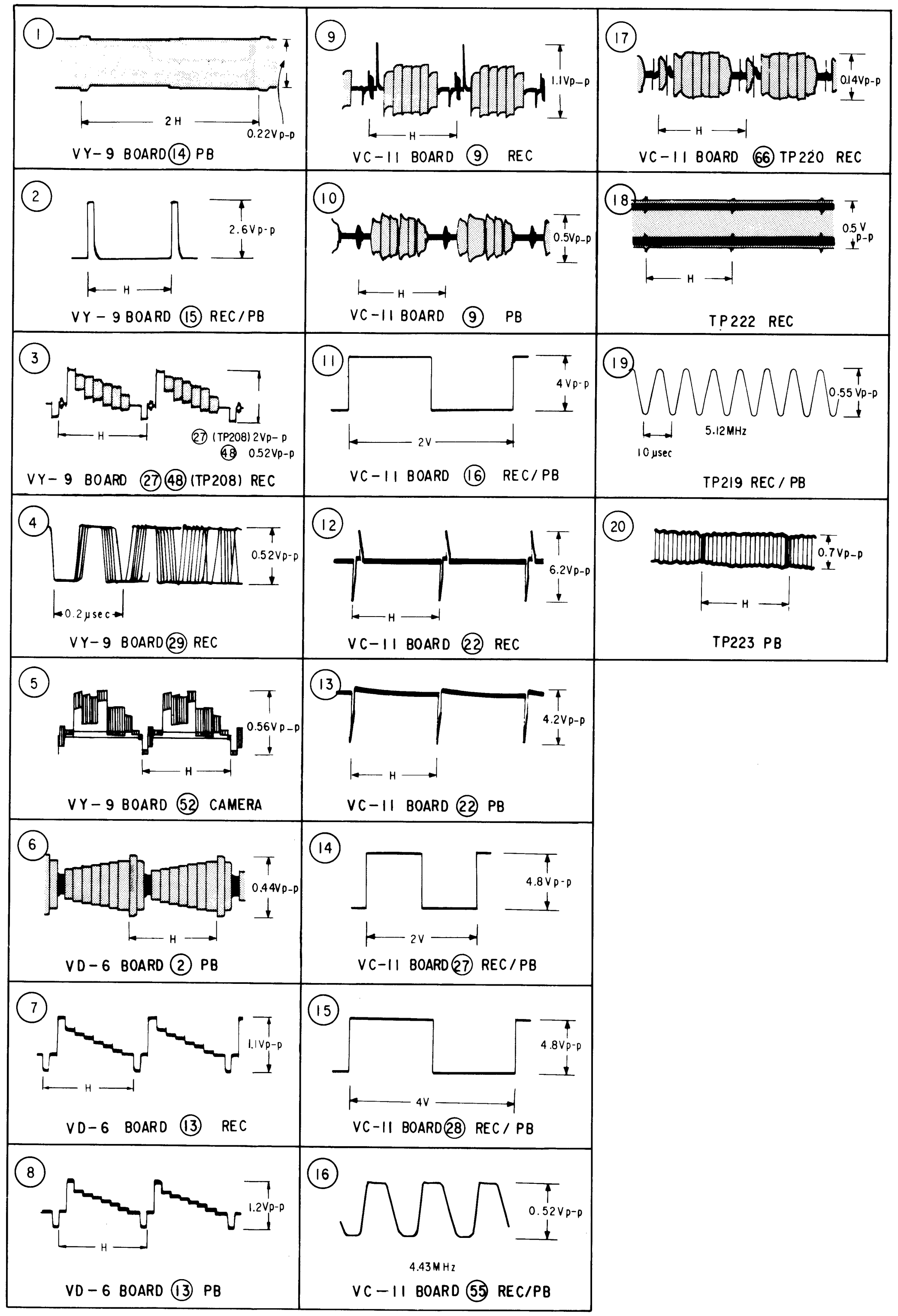
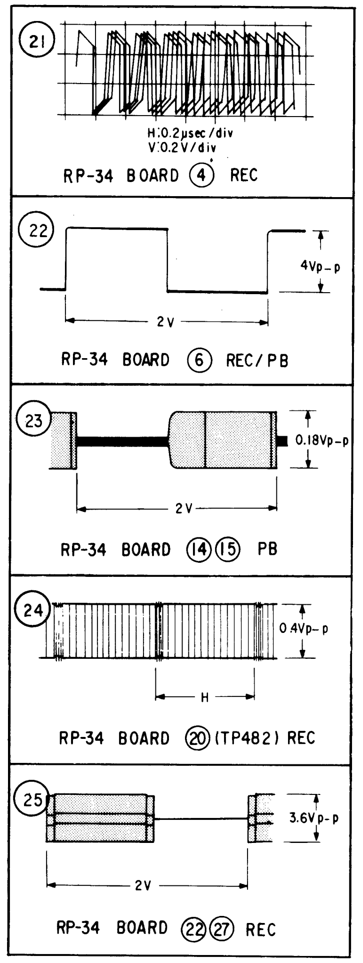

SCANNING FRAME
PICTURE TUBE FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

Fig. b Picture of TV monitor screen

VI-22 BOARD (VIDEO)


①
2H
0.22Vp-p
VY-9 BOARD ⑭ PB
②
2.6Vp-p
H
VY-9 BOARD ⑮ REC/PB
③
H
㉗ (TP208) 2Vp-p
(48) 0.52Vp-p
VY-9 BOARD ㉗ (48) (TP208) REC
④
0.52Vp-p
0.2μsec
VY-9 BOARD ㉙ REC
⑤
0.56Vp-p
H
VY-9 BOARD (52) CAMERA
⑥
0.44Vp-p
H
VD-6 BOARD ② PB
⑦
1.1Vp-p
H
VD-6 BOARD ⑬ REC
⑧
1.2Vp-p
H
VD-6 BOARD ⑬ PB
⑨
1.1Vp-p
H
VC-11 BOARD ⑨ REC
⑩
0.5Vp-p
H
VC-11 BOARD ⑨ PB
⑪
4Vp-p
2V
VC-11 BOARD ⑯ REC/PB
⑫
6.2Vp-p
H
VC-11 BOARD ㉒ REC
⑬
4.2Vp-p
H
VC-11 BOARD ㉒ PB
⑭
4.8Vp-p
2V
VC-11 BOARD ㉗ REC/PB
⑮
4.8Vp-p
4V
VC-11 BOARD ㉘ REC/PB
⑯
0.52Vp-p
4.43MHz
VC-11 BOARD (55) REC/PB
⑰
0.14Vp-p
H
VC-11 BOARD (66) TP220 REC
⑱
0.5Vp-p
H
TP222 REC
⑲
0.55Vp-p
10μsec
5.12MHz
TP219 REC/PB
⑳
0.7Vp-p
H
TP223 PB

RP-40 BOARD (VIDEO)

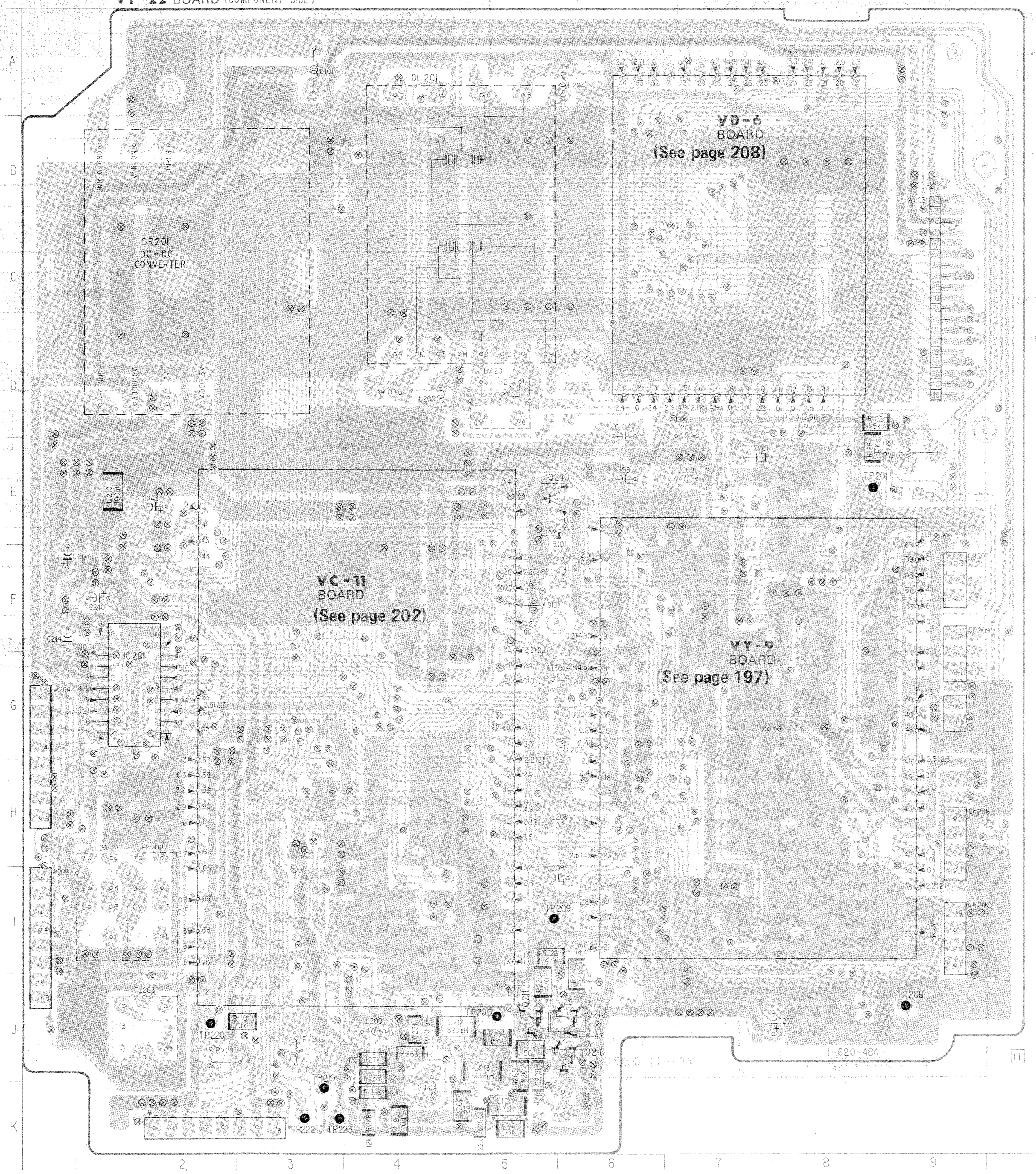

㉑
H:0.2μsec/div
V:0.2V/div
RP-34 BOARD ④ REC
㉒
4Vp-p
2V
RP-34 BOARD ⑥ REC/PB
㉓
0.18Vp-p
2V
RP-34 BOARD ⑭⑮ PB
㉔
0.4Vp-p
H
RP-34 BOARD ⑳ (TP482) REC
㉕
3.6Vp-p
2V
RP-34 BOARD ㉒㉗ REC

VI-22 (VIDEO SIGNAL PROCESS), RP-40 (VIDEO, AUDIO RF SIGNAL PROCESS, FLYING ERASE OSC), CC-6 (ACCESSORY INPUT/OUTPUT TERMINAL, SHARPNESS VR), SC-6 (MULTI CONNECTOR, FUSE) PRINTED WIRING BOARD

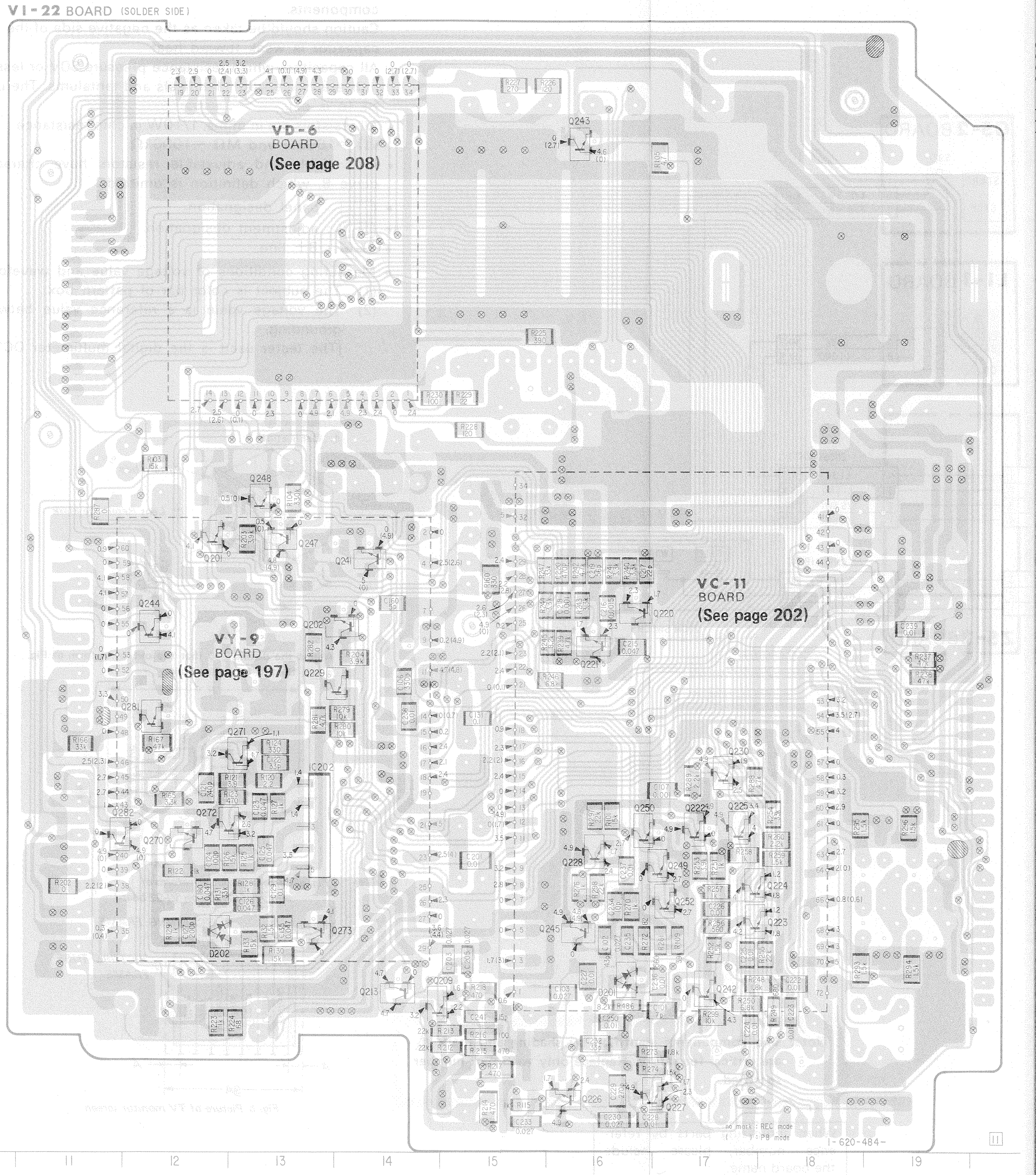
– Ref. No. VI-22, CC-6 BOARDS: 3000 series, SC-6, RP-40 BOARDS: 4000 series –

D201	J - 16
D202	I - 12
IC201	G - 2
IC202	H - 13
LV201	D - 5
Q201	F - 12
Q202	F - 14
Q209	J - 14
Q210	J - 6
Q211	J - 5
Q212	J - 6
Q213	J - 14
Q220	F - 16
Q221	F - 16
Q222	H - 17
Q224	I - 17
Q225	H - 17
Q226	K - 16
Q227	K - 17
Q228	H - 16
Q229	G - 14
Q230	H - 17
Q240	E - 6
Q241	F - 14
Q242	J - 17
Q243	B - 16
Q244	F - 12
Q245	I - 16
Q247	E - 13
Q248	E - 13
Q249	H - 17
Q250	H - 16
Q252	I - 17
Q270	H - 12
Q271	G - 13
Q272	H - 13
Q273	I - 13
Q281	G - 12
Q282	H - 11
RV201	J - 2
RV202	J - 3
RV203	E - 9
TP201	E - 9
TP206	J - 5
TP208	J - 9
TP209	I - 6
TP219	K - 3
TP220	J - 2
TP222	K - 3
TP223	K - 3

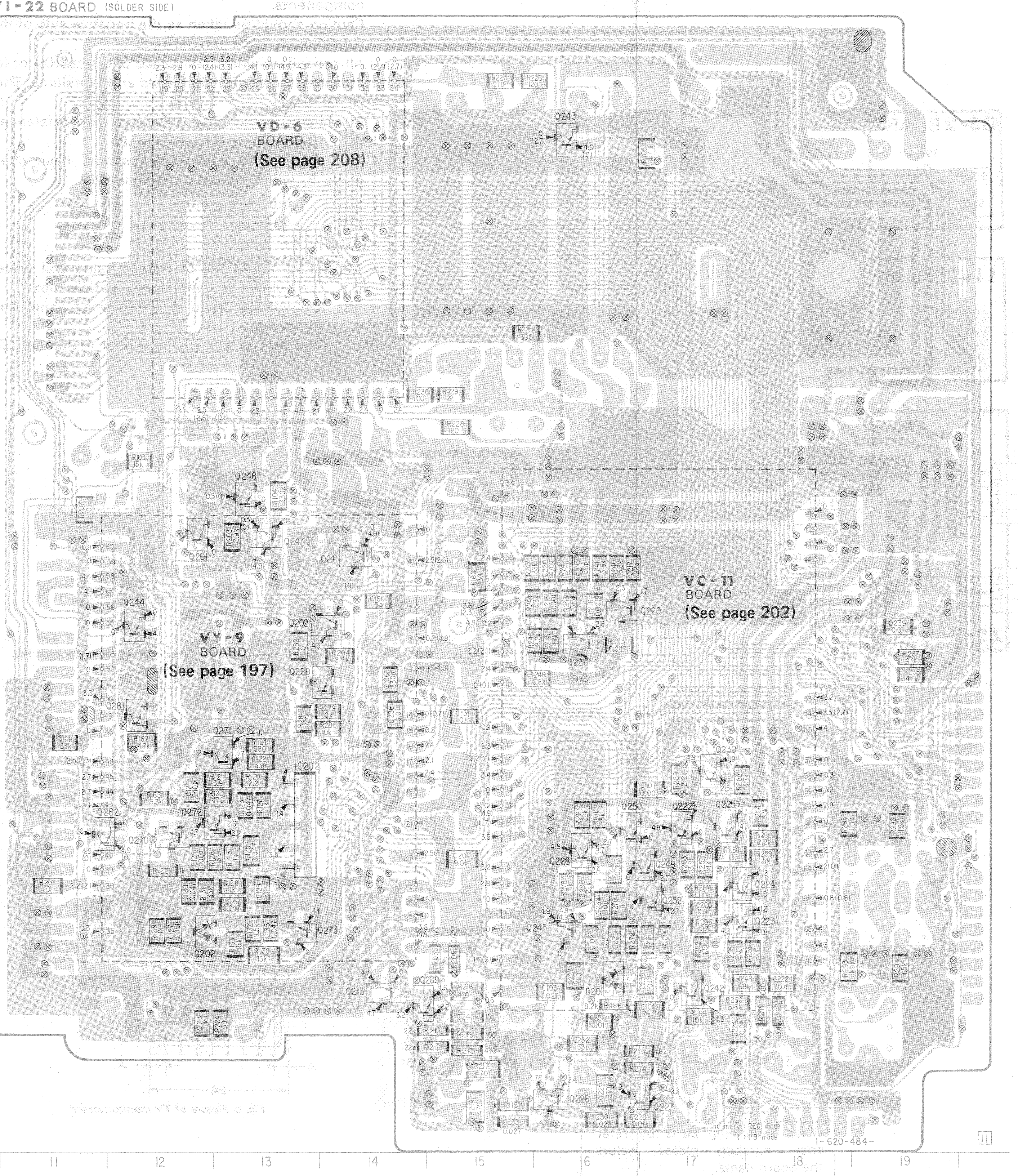
VI-22 BOARD (COMPONENT SIDE)


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
9
10
DR201
DC-DC
CONVERTER
DL201
LV201
VD-6
BOARD
(See page 208)
VC-11
BOARD
(See page 202)
VY-9
BOARD
(See page 197)
IC201
Q240
Q210
Q211
Q212
TP201
TP206
TP208
TP209
TP219
TP220
TP222
TP223
RV201
RV202
RV203
X201
1-620-484-

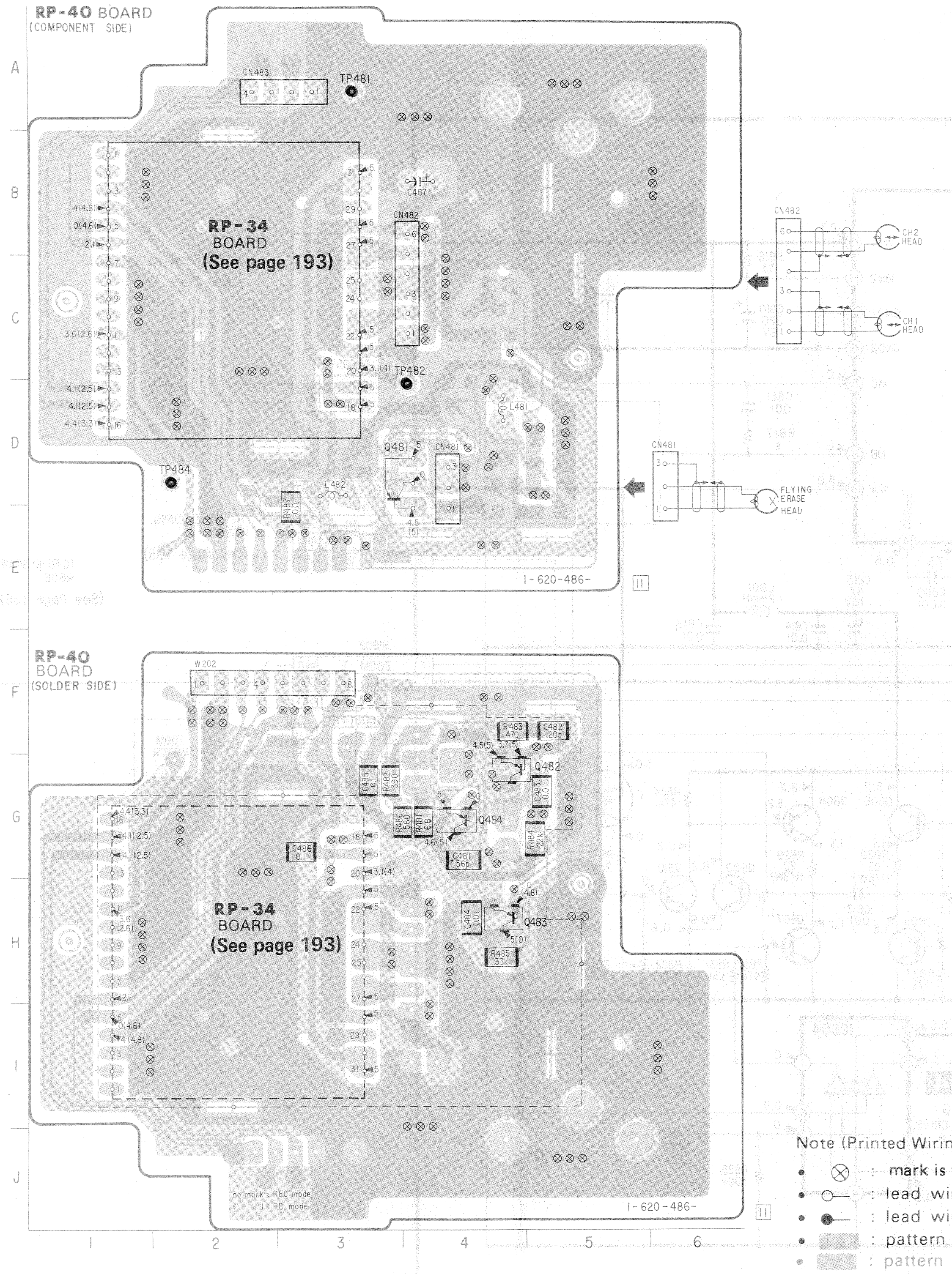
VI-22 BOARD (SOLDER SIDE)

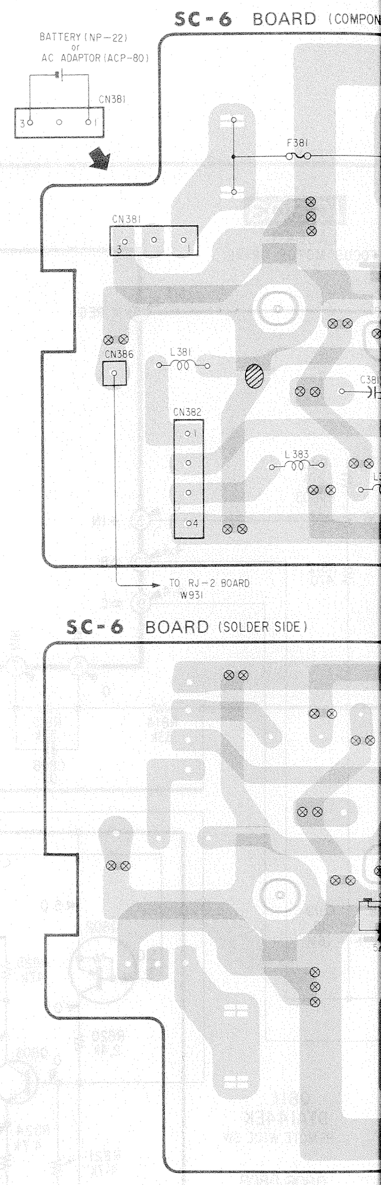

11
12
13
14
15
16
17
18
19
VD-6
BOARD
(See page 208)
VC-11
BOARD
(See page 202)
VY-9
BOARD
(See page 197)
IC202
D202
Q201
Q202
Q209
Q213
Q220
Q221
Q222
Q224
Q225
Q226
Q227
Q228
Q229
Q241
Q242
Q243
Q244
Q245
Q247
Q248
Q249
Q250
Q252
Q270
Q271
Q272
Q273
Q281
Q282
1-620-484-

T TERMINAL, SHARPNESS VR), SC-6 (MULTI CONNECTOR, FUSE) PRINTED WIRING BOARD


I-22 BOARD (SOLDER SIDE)
VD-6 BOARD (See page 208)
VY-9 BOARD (See page 197)
VC-11 BOARD (See page 202)
Q243
Q248
Q247
Q201
Q244
Q271
Q272
Q270
Q282
Q273
D202
Q213
Q209
Q220
Q221
Q250
Q222
Q225
Q228
Q245
Q224
Q223
Q230
Q242
Q226
Q227
IC202
1-620-484-
11
12
13
14
15
16
17
18
19

Q481	D-3
Q482	G-4
Q483	H-4
Q484	G-4
TP481	A-3
TP482	C-4
TP484	D-2

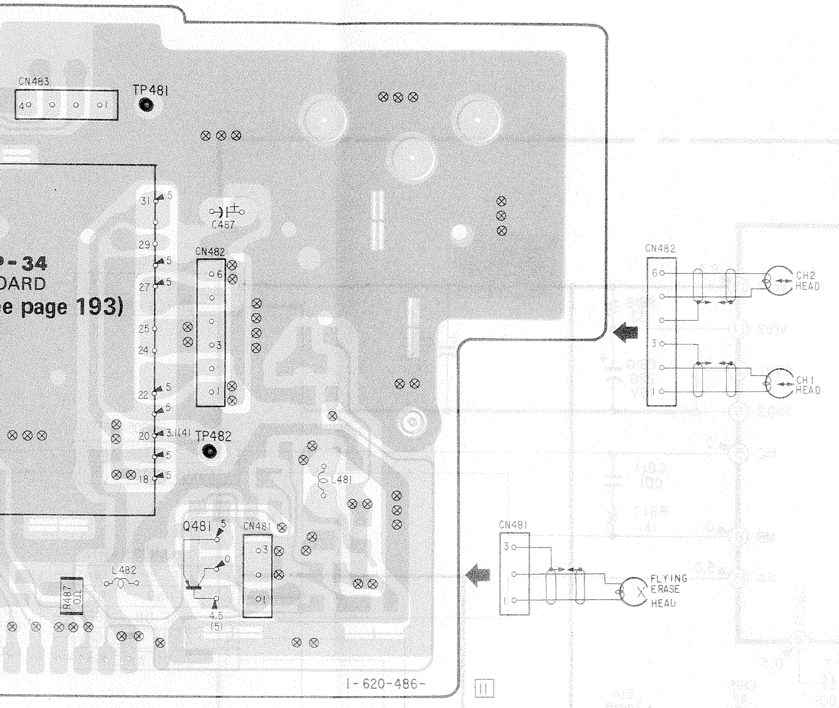

RP-40 BOARD (COMPONENT SIDE)
RP-34 BOARD (See page 193)
CN483
TP481
CN482
TP482
Q481
CN481
TP484
L481
L482
CH2 HEAD
CH1 HEAD
FLYING ERASE HEAD
1-620-486-
RP-40 BOARD (SOLDER SIDE)
W202
RP-34 BOARD (See page 193)
Q482
Q484
Q483
1-620-486-
no mark : REC mode
( ) : PB mode
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6

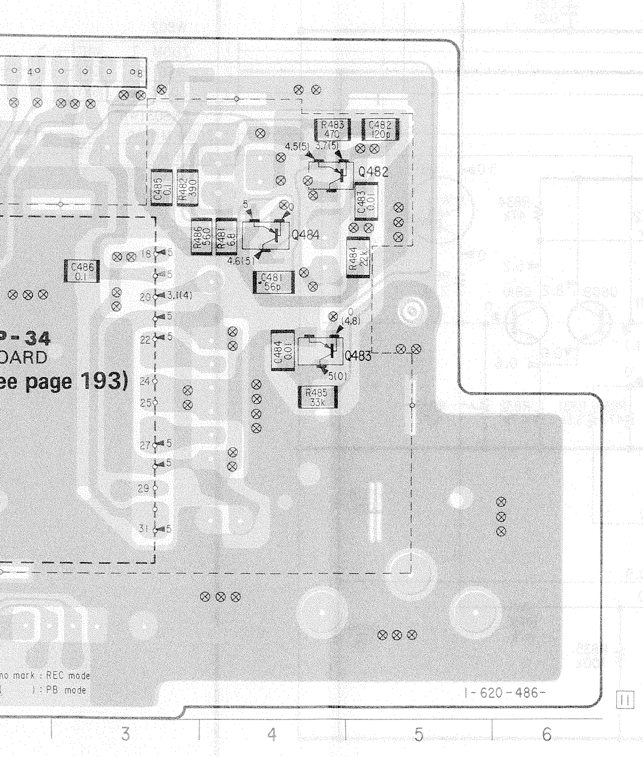

SC-6 BOARD (COMPON
BATTERY (NP-22) or AC ADAPTOR (ACP-80)
CN381
F381
CN386
L381
CN382
L383
TO RJ-2 BOARD W931
SC-6 BOARD (SOLDER SIDE)

Note (Printed Wiring Board):

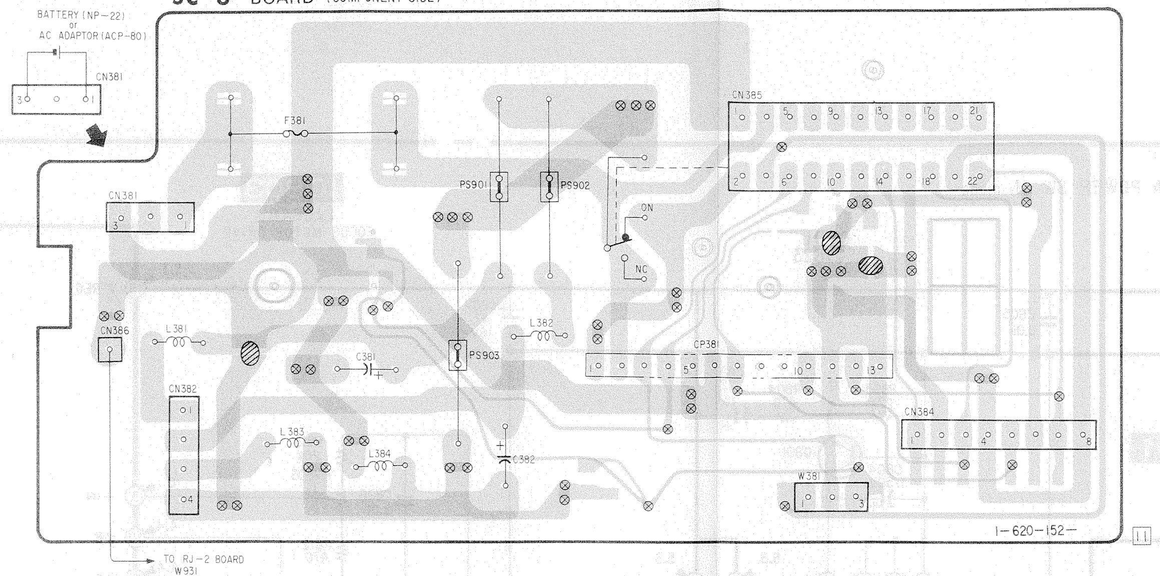
- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.

- Digital transistor (VI-22: Q201, 202, 213, 222, 229, 240, 241, 242, 243, 244, 245, 248, 249, 250, 252, 270, 273, 282, SC-6: Q381, RP-40: Q483, 484, CC-6: Q901, 904, 905) transistor with resistors.
Refer to the VI-22, SC-6, RP-40, CC-6 boards schematic diagram for digital transistor.

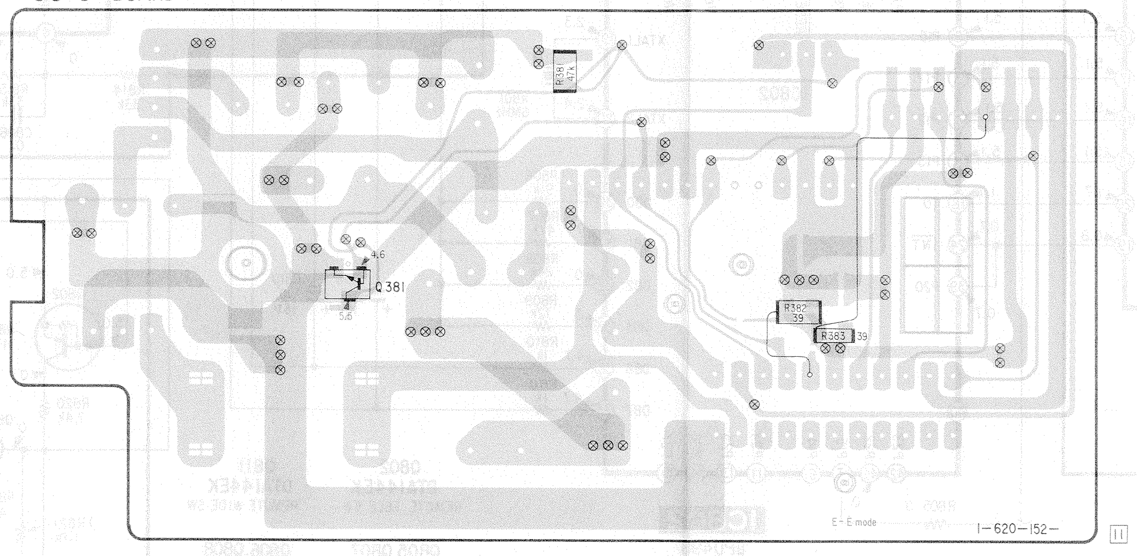

CN463
TP481
P-34
OARD
e page 193)
C487
CN482
TP482
Q481
CN481
L481
L482
CN462
CH2 HEAD
CH1 HEAD
FLYING ERASE HEAD
1-620-486-


Q482
Q484
Q483
R483
C482
C481
R485
C486
P-34
OARD
ee page 193)
1-620-486-
3
4
5
6

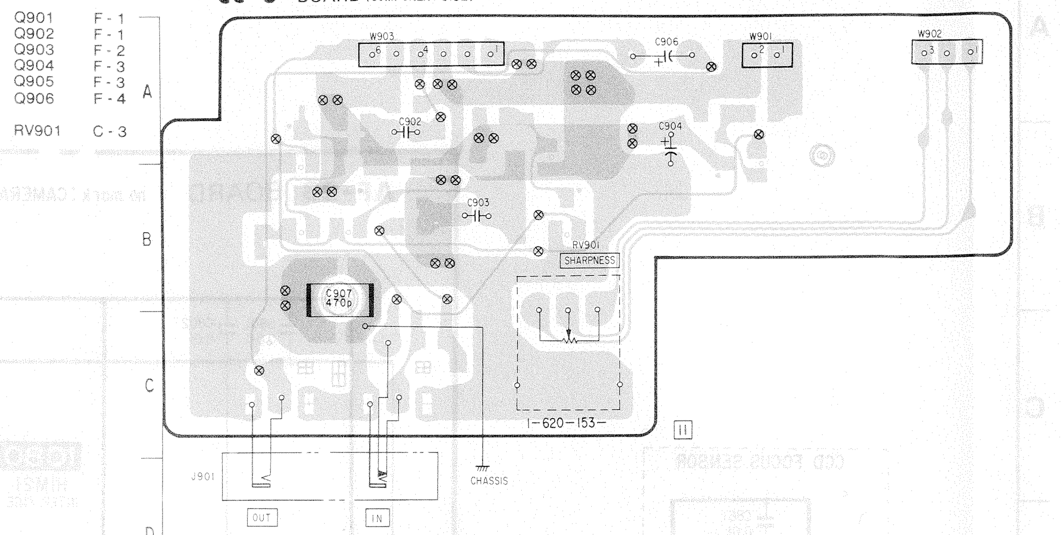
SC-6 BOARD (COMPONENT SIDE)


BATTERY (NP-22) or AC ADAPTOR (ACP-80)
CN381
F381
PS901
PS902
PS903
CN385
CN386
L381
L382
L383
L384
C381
C382
CP381
CN382
CN384
W331
TO RJ-2 BOARD W931
1-620-152-

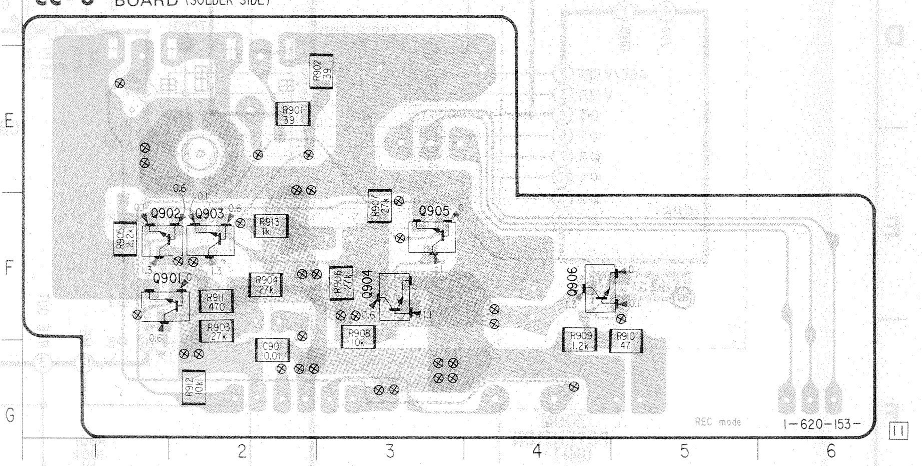
SC-6 BOARD (SOLDER SIDE)


Q381
R382
R383
E-E mode
1-620-152-

CC-6 BOARD (COMPONENT SIDE)


Q901 F-1
Q902 F-1
Q903 F-2
Q904 F-3
Q905 F-3
Q906 F-4
RV901 C-3
W903
W901
W902
C906
C902
C904
C903
C907
RV901 SHARPNESS
J901
OUT
IN
CHASSIS
1-620-153-
A
B
C
D

CC-6 BOARD (SOLDER SIDE)


Q901
Q902
Q903
Q904
Q905
Q906
R901
R902
R903
R904
R905
R906
R907
R908
R909
R910
R911
R912
R913
C901
REC mode
1-620-153-
E
F
G
1
2
3
4
5
6

Note (Printed Wiring Board):

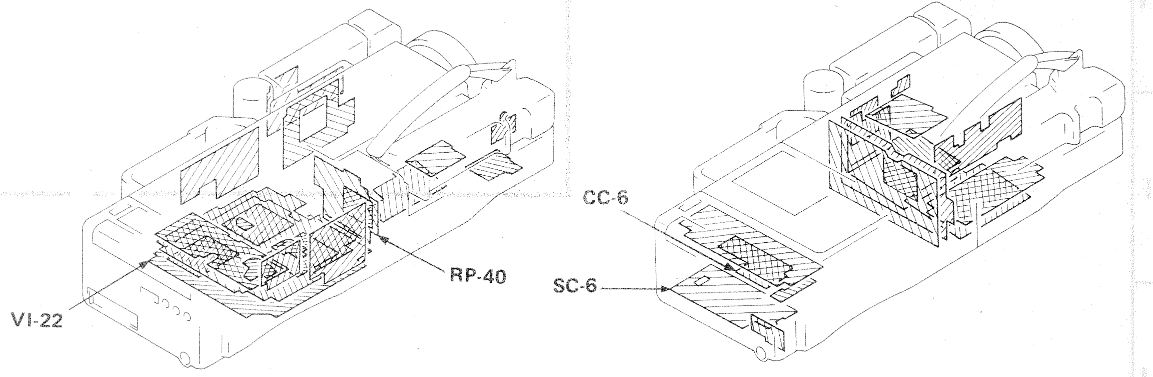
- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (VI-22: Q201, 202, 213, 222, 229, 240, 241, 242, 243, 244, 245, 248, 249, 250, 252, 270, 273, 282, SC-6: Q381, RP-40: Q483, 484, CC-6: Q901, 904, 905) transistor with resistors.
  Refer to the VI-22, SC-6, RP-40, CC-6 boards schematic diagram for digital transistor.

Note

Soldering side: Parts on the soldering side being seen from the soldering are stated.

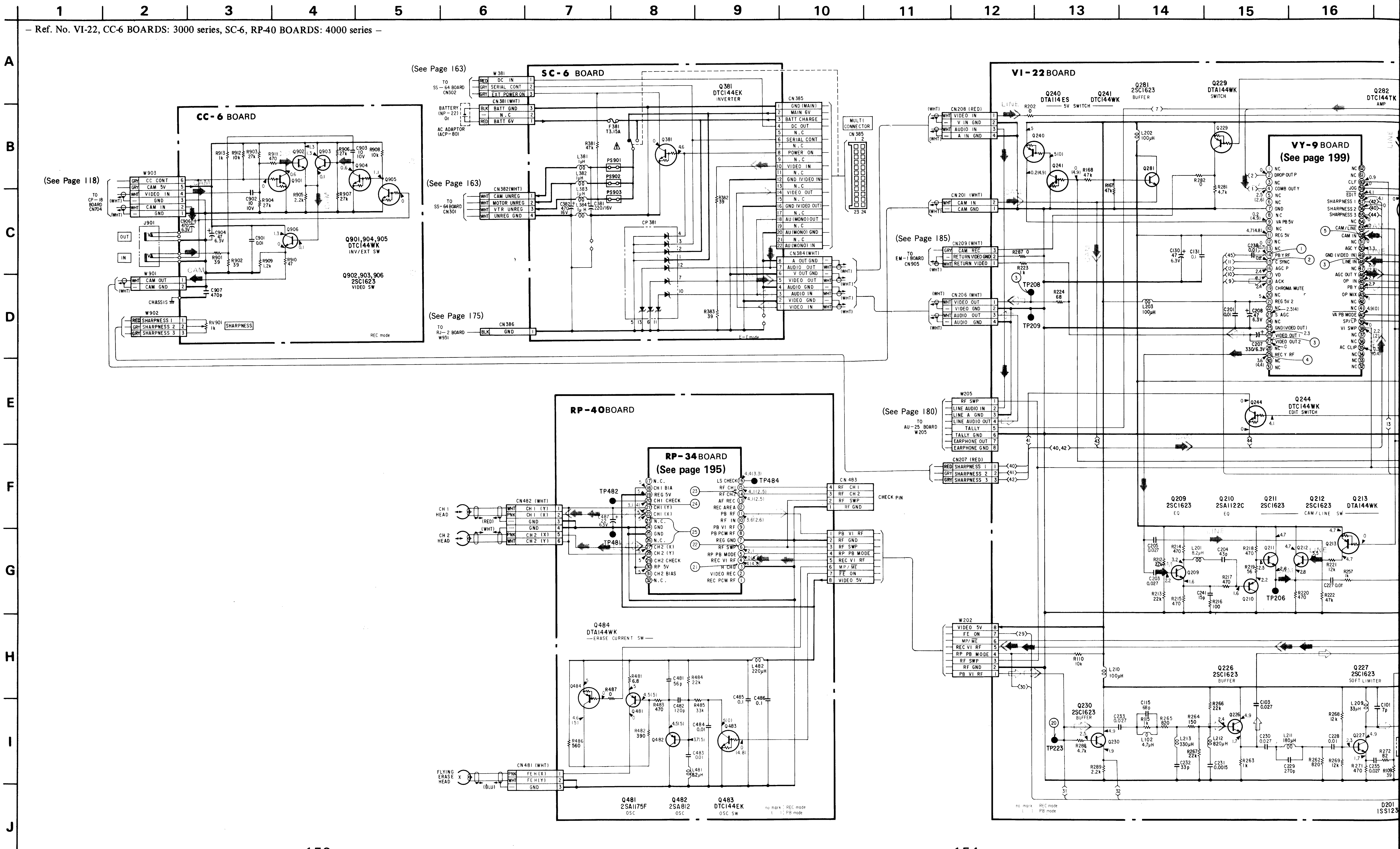
Component side: Parts on the component side being seen from the component are stated.

Regarding color indication of patterns
- Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- Pattern being seen in the state of the rear surface side is indicated in green pattern.

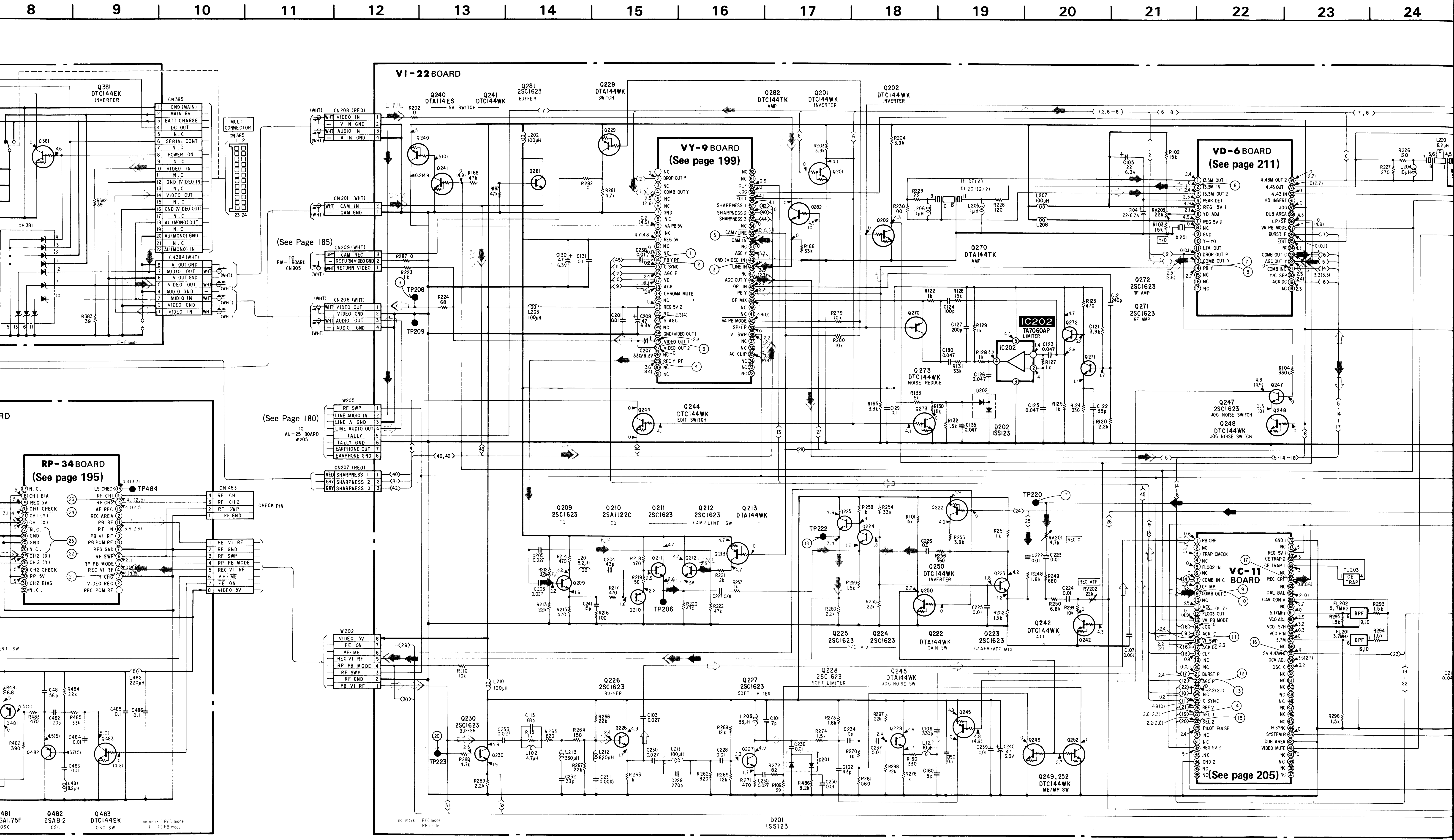

RP-40
VI-22
CC-6
SC-6

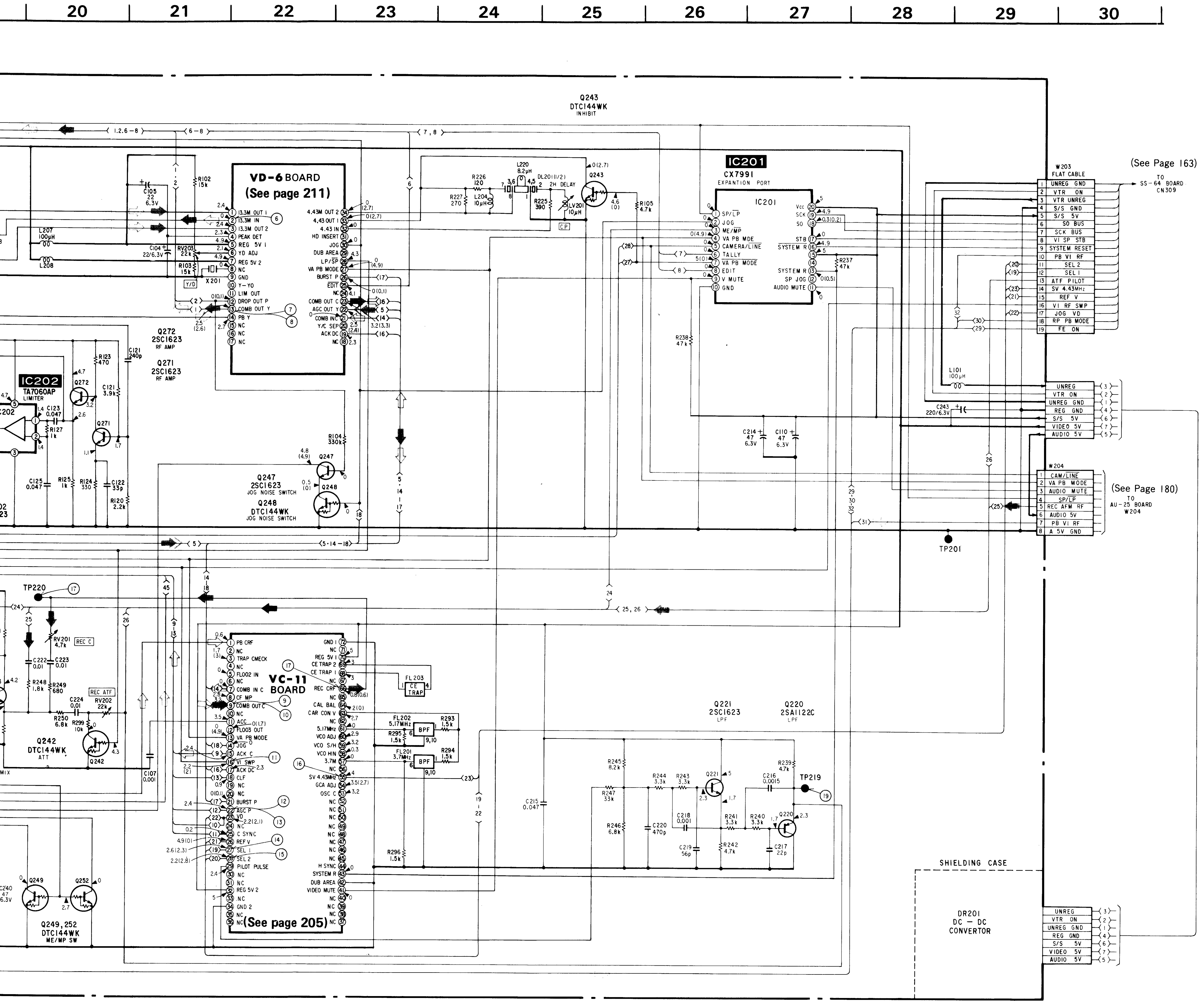
VI-22 (VIDEO SIGNAL PROCESS), RP-40 (VIDEO, AUDIO RF SIGNAL PROCESS, FLYING ERASE OSC), CC-6 (ACCESSORY INPUT/OUTPUT TERMINAL, SHARPNESS VR), SC-6 (MULTI CONNECTOR, FUSE) SCHEMATIC DIAGRAM

– Ref. No. VI-22, CC-6 BOARDS: 3000 series, SC-6, RP-40 BOARDS: 4000 series –


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
CC-6 BOARD
(See Page 118)
TO CP-18 BOARD CN704
W903
CC CONT
CAM 5V
VIDEO IN
GND
CAM IN
GND
J901
OUT
IN
W901
CAM OUT
CAM GND
C907 470p
CHASSIS
W902
SHARPNESS 1
SHARPNESS 2
SHARPNESS 3
RV901 1k
SHARPNESS
Q901,904,905 DTC144WK INV/EXT SW
Q902,903,906 2SC1623 VIDEO SW
REC mode
SC-6 BOARD
(See Page 163)
TO SS-64 BOARD CN302
W381
DC IN
SERIAL CONT
EXT POWER ON
CN381 (WHT)
BATTERY (NP-22) Or AC ADAPTOR (ACP-80)
BATT GND
N.C
BATT 6V
F381 T3.15A
Q381 DTC144EK INVERTER
CN385
GND (MAIN)
MAIN 6V
BATT CHARGE
DC OUT
N.C
SERIAL CONT
POWER ON
VIDEO IN
GND (VIDEO IN)
VIDEO OUT
GND (VIDEO OUT)
AU (MONO) OUT
AU (MONO) GND
AU (MONO) IN
MULTI CONNECTOR CN385
PS901
PS902
PS903
(See Page 163)
TO SS-64 BOARD CN301
CN382 (WHT)
CAM UNREG
MOTOR UNREG
VTR UNREG
UNREG GND
CP381
CN384 (WHT)
A OUT GND
AUDIO OUT
V OUT GND
VIDEO OUT
AUDIO GND
AUDIO IN
VIDEO GND
VIDEO IN
(See Page 175)
TO RJ-2 BOARD W931
CN386
GND
E-E mode
RP-40 BOARD
RP-34 BOARD (See page 195)
TP482
TP481
TP484
CH 1 HEAD
CH 2 HEAD
CN482 (WHT)
CH 1 (Y)
CH 1 (X)
GND
CH 2 (X)
CH 2 (Y)
N.C.
CH1 BIA
REG 5V
CH1 CHECK
CH1 (Y)
CH1 (X)
CH2 (X)
CH2 (Y)
CH2 CHECK
RP 5V
CH2 BIAS
LS CHECK
RF CH1
RF CH2
AF REC
REC AREA
PB RF
RF IN
PB VI RF
PB PCM RF
REG GND
RF SWP
RP PB MODE
REC VI RF
H CHG
VIDEO REC
REC PCM RF
CN483
RF CH 1
RF CH 2
RF SWP
RF GND
CHECK PIN
PB VI RF
RF GND
RF SWP
RP PB MODE
REC VI RF
MP / ME
FE ON
VIDEO 5V
Q484 DTA144WK —ERASE CURRENT SW—
L482 220μH
FLYING ERASE HEAD
CN481 (WHT)
FE H (X)
FE H (Y)
GND
Q481 2SA1175F OSC
Q482 2SA812 OSC
Q483 DTC144EK OSC SW
no mark : REC mode ( ) : PB mode
VI-22 BOARD
Q240 DTA114ES
Q241 DTC144WK
5V SWITCH
Q281 2SC1623 BUFFER
Q229 DTA144WK SWITCH
Q282 DTC144TK AMP
VY-9 BOARD (See page 199)
CN208 (RED)
VIDEO IN
V IN GND
AUDIO IN
A IN GND
CN201 (WHT)
CAM IN
CAM GND
(See Page 185)
TO EM-1 BOARD CN905
CN209 (WHT)
CAM REC
RETURN VIDEO GND
RETURN VIDEO
TP208
TP209
CN206 (WHT)
VIDEO OUT
VIDEO GND
AUDIO OUT
AUDIO GND
(See Page 180)
TO AU-25 BOARD W205
W205
RF SWP
LINE AUDIO IN
LINE A GND
LINE AUDIO OUT
TALLY
TALLY GND
EARPHONE OUT
EARPHONE GND
CN207 (RED)
SHARPNESS 1
SHARPNESS 2
SHARPNESS 3
Q244 DTC144WK EDIT SWITCH
NC
DROP OUT P
COMB OUT Y
GND
VA PB 5V
REG 5V
PB Y RF
C SYNC
AGC P
VD
ACK
CHROMA MUTE
REG 5V 2
S AGC
GND (VIDEO OUT)
VIDEO OUT 1
VIDEO OUT 2
REC Y RF
CLF
JOG
EDIT
SHARPNESS 1
SHARPNESS 2
SHARPNESS 3
CAM/LINE
CAM IN
GND (VIDEO IN)
LINE IN
AGC OUT Y
OP IN
PB Y
OP MIX
AGC Y
VA PB MODE
SP/LP
VI SWP
AC CLIP
Q209 2SC1623 EQ
Q210 2SA1122C EQ
Q211 2SC1623
Q212 2SC1623 CAM/LINE SW
Q213 DTA144WK
TP206
W202
VIDEO 5V
FE ON
MP/ME
REC VI RF
RP PB MODE
RF SWP
RF GND
PB VI RF
Q230 2SC1623 BUFFER
TP223
Q226 2SC1623 BUFFER
Q227 2SC1623 SOFT LIMITER
D201 1SS123
no mark : REC mode ( ) : PB mode

CESSORY INPUT/OUTPUT TERMINAL, SHARPNESS VR), SC-6 (MULTI CONNECTOR, FUSE) SCHEMATIC DIAGRAM


8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
VI-22 BOARD
VY-9 BOARD
(See page 199)
VD-6 BOARD
(See page 211)
VC-11 BOARD
(See page 205)
RP-34 BOARD
(See page 195)
(See Page 185)
TO EM-1 BOARD CN905
(See Page 180)
TO AU-25 BOARD W205
MULTI CONNECTOR
CN 385
CN 384 (WHT)
CN 483
CHECK PIN
CN208 (RED)
CN201 (WHT)
CN209 (WHT)
CN206 (WHT)
CN207 (RED)
W205
W202
Q381 DTC144EK INVERTER
Q240 DTA114ES
Q241 DTC144WK
5V SWITCH
Q281 2SC1623 BUFFER
Q229 DTA144WK SWITCH
Q282 DTC144TK AMP
Q201 DTC144WK INVERTER
Q202 DTC144WK INVERTER
Q270 DTA144TK AMP
Q272 2SC1623 RF AMP
Q271 2SC1623 RF AMP
IC202 TA7060AP LIMITER
Q273 DTC144WK NOISE REDUCE
D202 1SS123
Q244 DTC144WK EDIT SWITCH
Q247 2SC1623 JOG NOISE SWITCH
Q248 DTC144WK JOG NOISE SWITCH
Q209 2SC1623 EQ
Q210 2SA1122C EQ
Q211 2SC1623
Q212 2SC1623
Q213 DTA144WK
CAM/LINE SW
Q250 DTC144WK INVERTER
Q225 2SC1623
Q224 2SC1623
Y/C MIX
Q222 DTA144WK GAIN SW
Q223 2SC1623 C/AFM/ATF MIX
Q242 DTC144WK ATT
Q226 2SC1623 BUFFER
Q227 2SC1623 SOFT LIMITER
Q228 2SC1623 SOFT LIMITER
Q245 DTA144WK JOG NOISE SW
Q230 2SC1623 BUFFER
Q249, 252 DTC144WK ME/MP SW
D201 1SS123
Q481 2SA1175F OSC
Q482 2SA812 OSC
Q483 DTC144EK OSC SW
TP484
TP208
TP209
TP206
TP220
TP222
TP223
RV201 REC C
RV202 REC ATF
RV203
FL202 5.17MHz
FL201 3.7MHz
FL203 CE TRAP
BPF
1H DELAY DL201(2/2)
no mark : REC mode
( ) : PB mode


20
21
22
23
24
25
26
27
28
29
30
VD-6 BOARD
(See page 211)
VC-11 BOARD
(See page 205)
IC201
CX7991
EXPANTION PORT
IC202
TA7060AP
LIMITER
Q243
DTC144WK
INHIBIT
Q272
2SC1623
RF AMP
Q271
2SC1623
RF AMP
Q247
2SC1623
JOG NOISE SWITCH
Q248
DTC144WK
JOG NOISE SWITCH
Q242
DTC144WK
ATT
Q249, 252
DTC144WK
ME/MP SW
Q221
2SC1623
LPF
Q220
2SA1122C
LPF
W203
FLAT CABLE
(See Page 163)
TO
SS-64 BOARD
CN309
W204
(See Page 180)
TO
AU-25 BOARD
W204
TP201
TP219
TP220
SHIELDING CASE
DR201
DC – DC
CONVERTOR
FL202
5.17MHz
FL201
3.7MHz
FL203
CE TRAP
BPF

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.

- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- **Signal path**

➡ :REC Y SIGNAL
:PB Y SIGNAL
➡ :REC CHROMA SIGNAL
⇨ :PB CHROMA SIGNAL
➡ :REC Y & CHROMA SIGNAL
> :PB Y & CHROMA SIGNAL
➡ :REC AUDIO SIGNAL
:PB AUDIO SIGNAL

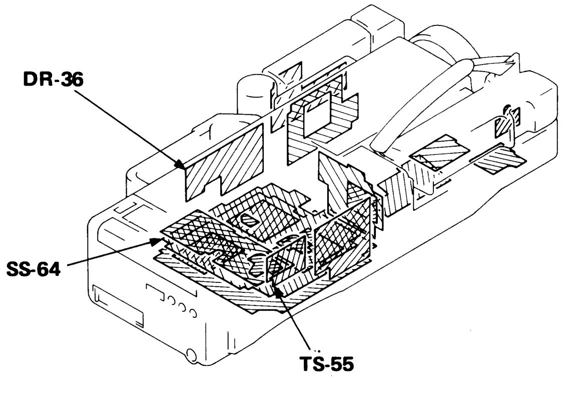
Note (Printed Wiring Board):
- ⊗ : mark is through hole.
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ░ : pattern of the rear side.
- ▒ : B+ Pattern.

- Digital transistor (SS-64: Q301, 302, 303, 304, 305, 306, 308, 310, 311, 312, 313, 314, 318, 319, 320, 321, 324, 325, 326, 329, 332, 333, 336, 502, 508, 510, 511, 512, 513, 515, 523, 524, 525, 657, DR-36: Q502) transistor with resistors.
Refer to the SS-64, DR-36 boards schematic diagram for digital transistor.

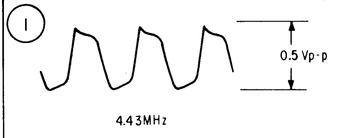
Note

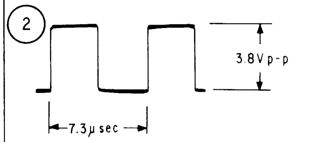
Soldering side:	**Parts on the soldering side being seen from the soldering are stated.**
Component side:	**Parts on the component side being seen from the component are stated.**

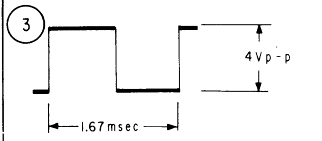
Regarding color indication of patterns
- * **Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).**
- * **Pattern being seen in the state of the rear surface side is indicated in green pattern.**

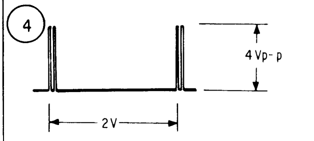

DR-36
SS-64
TS-55

SS-64 BOARD (SERVO)

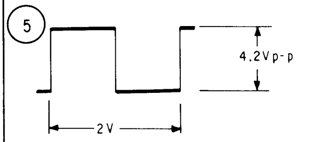

①
0.5Vp-p
4.43MHz
IC502 ② REC/PB


②
3.8Vp-p
7.3μsec
IC502 ④ REC/PB

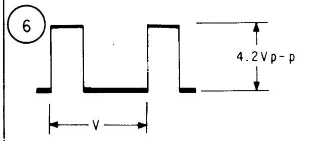

③
4Vp-p
1.67msec
IC502 ⑥ REC/PB



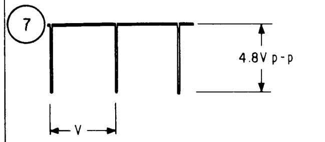
IC502 ⑦ REC/PB



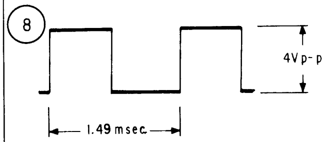
IC502 ⑧ REC/PB

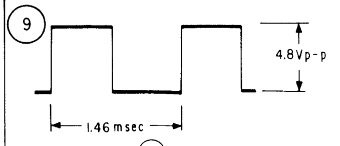


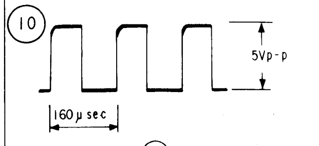
IC502 ⑱ REC/PB

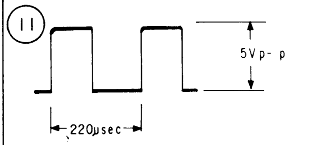


IC502 ⑲ REC

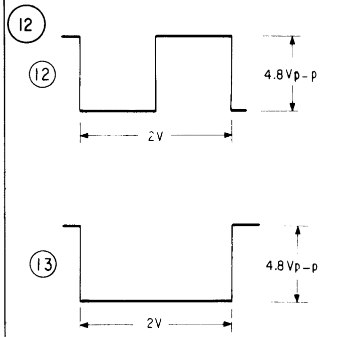

⑧
4Vp-p
1.49msec
IC502 ㉓ REC/PB(LP)

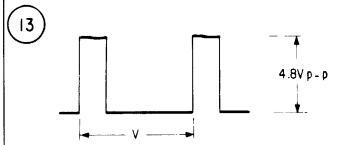

⑨
4.8Vp-p
1.46msec
IC508 ⑥ REC/PB


⑩
5Vp-p
160μsec
IC508 ⑥ CUE

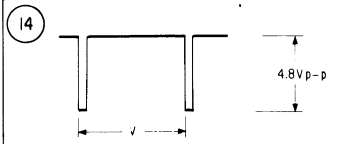

⑪
5Vp-p
220μsec
IC508 ⑥ REV

SS-64 BOARD (MECHANISM CONTROL)

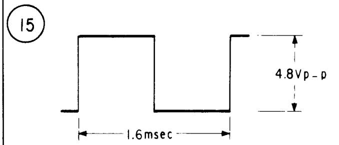

⑫
⑫
4.8Vp-p
2V
⑬
4.8Vp-p
2V
IC301 ⑫⑬ REC/PB

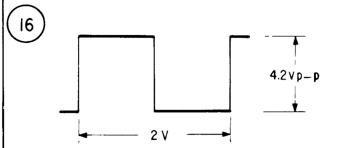


IC301 ⑭ PB



IC301 ⑮ PB


⑮
4.8Vp-p
1.6msec
IC301 ㊵ REC / PB



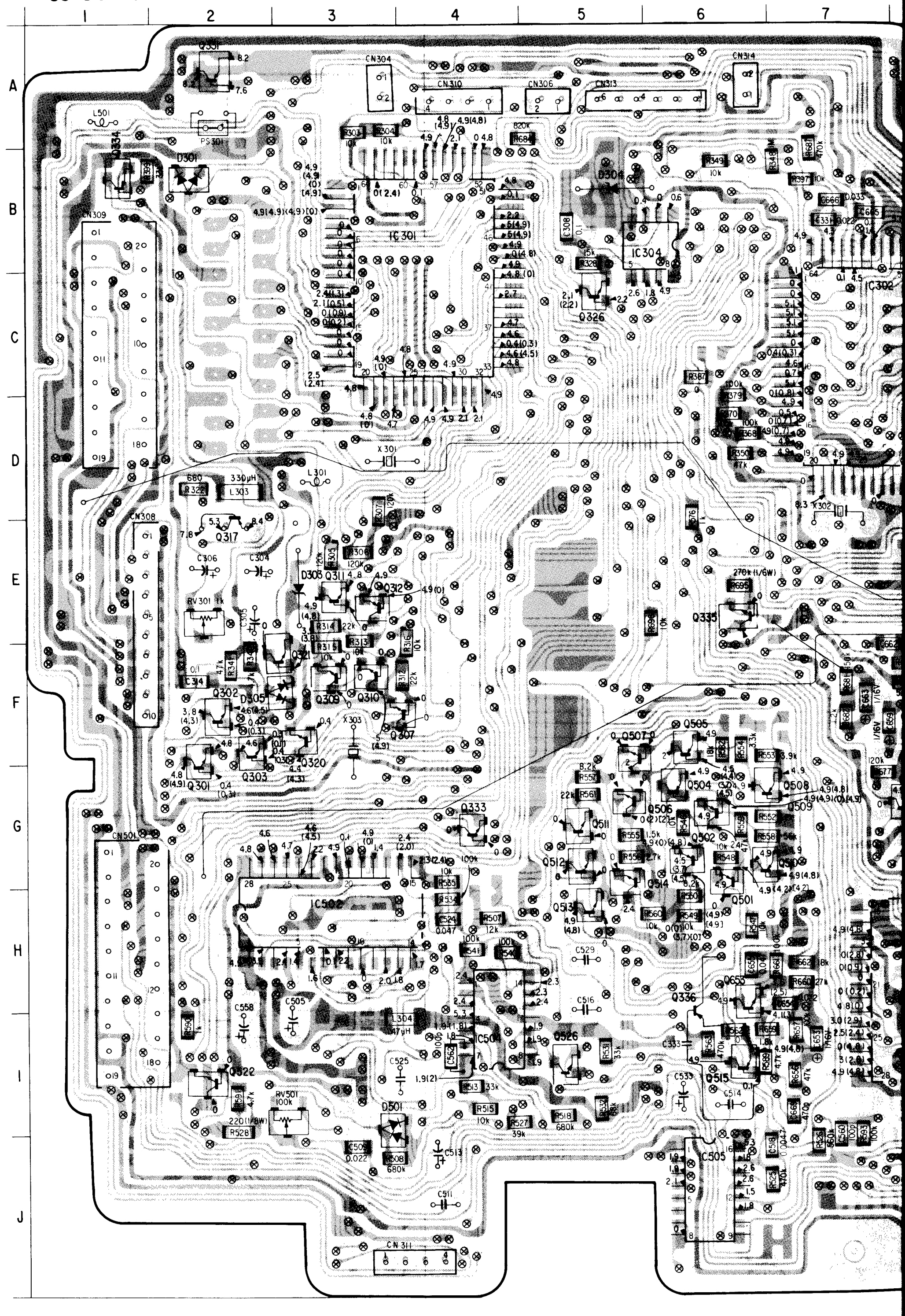
IC301 ㊽ ㊾ REC/PB

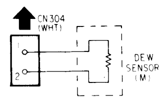
SS-64 (SYSTEM CONTROL/SERVO), DR-36 (DRUM/CAPSTAN MOTOR DRIVE, TAPE END SENSOR)

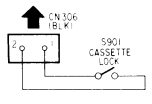
– Ref. No. SS-64 BOARD: 5000 series, DR-36 BOARD: 6000 series, TS-55 BOARD: 7000 series –

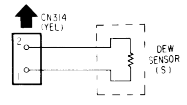
D301	B-2
D303	E-3
D304	B-5
D305	F-3
D501	I-3
D505	I-18
D651	F-12
IC301	B-4
IC302	C-7
IC303	F-18
IC304	B-6
IC305	E-9
IC306	F-11
IC307	A-13
IC501	J-13
IC502	H-3
IC504	I-4
IC505	J-6
IC506	C-9
IC507	B-9
IC508	F-14
IC509	I-8
IC651	F-8
Q301	F-2
Q302	F-2
Q303	F-2
Q304	B-16
Q305	F-19
Q306	H-18
Q307	F-4
Q308	F-16
Q309	F-3
Q310	F-3
Q311	E-3
Q312	E-3
Q313	F-17
Q314	E-17
Q315	E-18
Q316	E-19
Q317	E-2
Q318	E-11
Q319	C-19
Q320	F-3
Q321	F-3
Q322	B-14
Q323	D-12
Q324	A-15
Q325	A-14
Q326	C-5
Q329	A-18
Q331	A-2
Q332	G-16
Q333	G-4
Q334	B-1
Q335	E-6
Q336	I-6
Q501	G-6
Q502	G-6
Q504	G-6
Q505	F-6
Q506	G-5
Q507	F-5
Q508	G-7
Q509	G-6
Q510	G-7
Q511	G-5
Q512	G-5
Q513	H-5
Q514	G-5
Q515	I-6
Q516	H-17
Q517	G-18
Q518	H-17
Q519	H-18
Q520	J-18
Q521	I-18
Q522	I-2
Q523	I-18
Q524	J-17
Q525	J-17
Q526	I-5
Q651	I-13
Q652	I-14
Q653	H-6
Q654	F-9
Q655	F-13
Q656	G-12
Q657	G-8
RV301	E-2
RV501	I-3
RV502	H-9

SS-64 BOARD (COMPONENT SIDE)


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
CN304
CN310
CN306
CN313
CN314
L501
IC301
IC304
IC502
Q301
Q302
Q303
Q317
Q326
Q333
Q334
Q335
Q336
Q501
Q502
Q504
Q505
Q507
Q508
Q511
Q512
Q515
Q522
X301
L301
CN308
CN501
CN311
RV301
RV501
C505
C514
C529
C531
C533


CN304 (WHT)
DEW SENSOR (M)

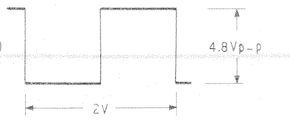

CN306 (BLK)
S901 CASSETTE LOCK

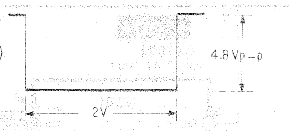

CN314 (YEL)
DEW SENSOR (S)

SS-64 (SYSTEM CONTROL/SERVO), DR-36 (DRUM/CAPSTAN MOTOR DRIVE, TAPE END SENSOR), TS-55 (TAPE TOP SENSOR) PRINTED WIRING BOARD

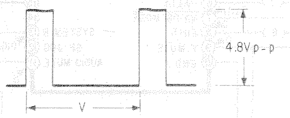
– Ref. No. SS-64 BOARD: 5000 series, DR-36 BOARD: 6000 series, TS-55 BOARD: 7000 series –

64 BOARD (MECHANISM CONTROL)

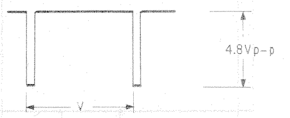




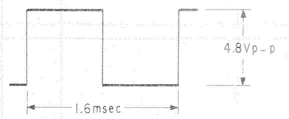
IC301 ⑫ ⑬ REC/PB



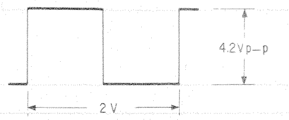
IC301 ⑭ PB



IC301 ⑮ PB



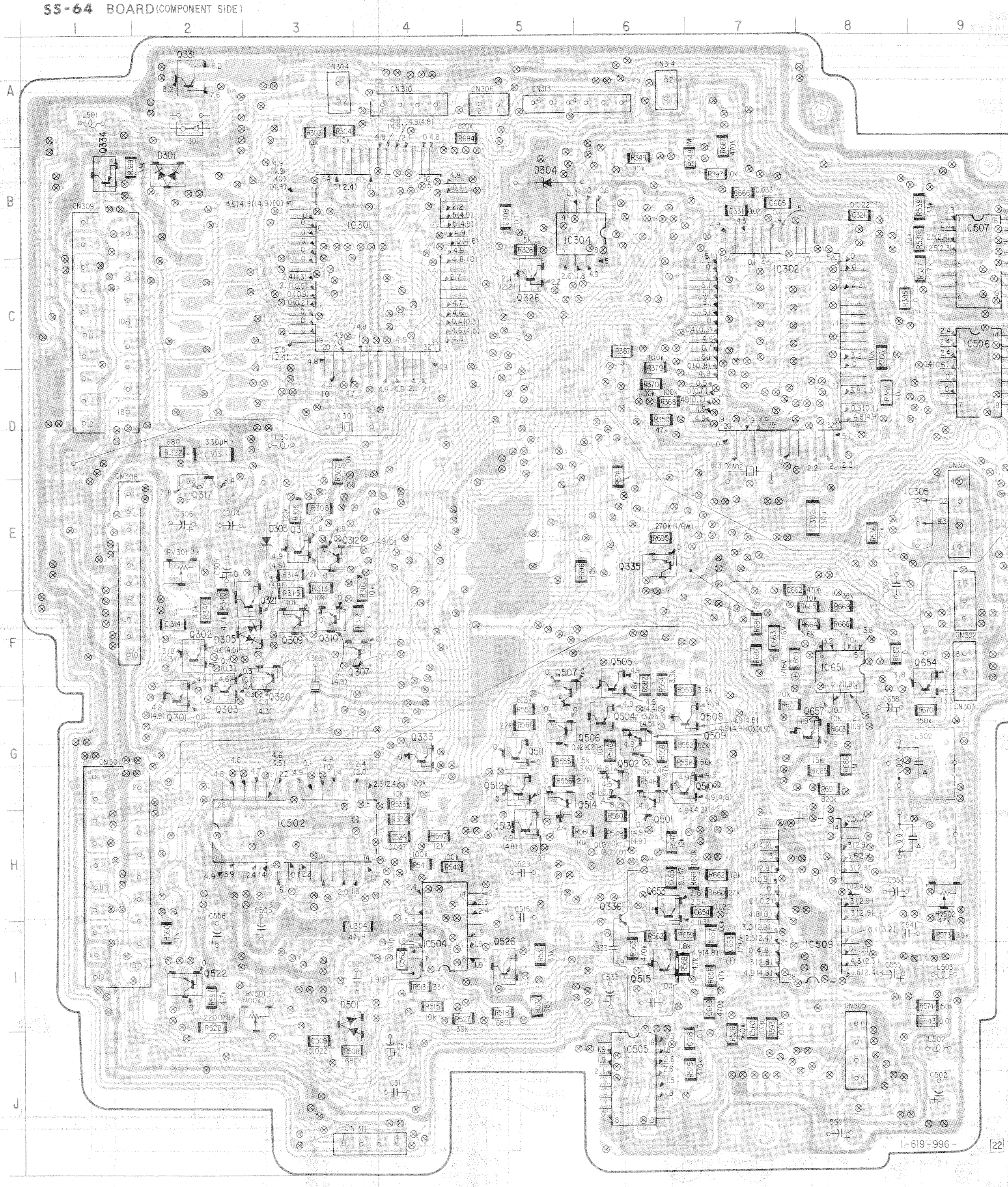
IC301 ㊵ REC / PB



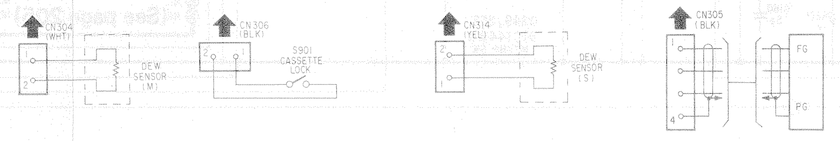
IC301 ㊽ ㊾ REC/PB

D301	B-2
D303	E-3
D304	B-5
D305	F-3
D501	I-3
D505	I-18
D651	F-12
IC301	B-4
IC302	C-7
IC303	F-18
IC304	B-6
IC305	E-9
IC306	F-11
IC307	A-13
IC501	J-13
IC502	H-3
IC504	I-4
IC505	J-6
IC506	C-9
IC507	B-9
IC508	F-14
IC509	I-8
IC651	F-8
Q301	F-2
Q302	F-2
Q303	F-2
Q304	B-16
Q305	F-19
Q306	H-18
Q307	F-4
Q308	F-16
Q309	F-3
Q310	F-3
Q311	E-3
Q312	E-3
Q313	F-17
Q314	E-17
Q315	E-18
Q316	E-19
Q317	E-2
Q318	E-11
Q319	C-19
Q320	F-3
Q321	F-3
Q322	B-14
Q323	D-12
Q324	A-15
Q325	A-14
Q326	C-5
Q329	A-18
Q331	A-2
Q332	G-16
Q333	G-4
Q334	B-1
Q335	E-6
Q336	I-6
Q501	G-6
Q502	G-6
Q504	G-6
Q505	F-6
Q506	G-5
Q507	F-5
Q508	G-7
Q509	G-6
Q510	G-7
Q511	G-5
Q512	G-5
Q513	H-5
Q514	G-5
Q515	I-6
Q516	H-17
Q517	G-18
Q518	H-17
Q519	H-18
Q520	J-18
Q521	I-18
Q522	I-2
Q523	I-18
Q524	J-17
Q525	J-17
Q526	I-5
Q651	I-13
Q652	I-14
Q653	H-6
Q654	F-9
Q655	F-13
Q656	G-12
Q657	G-8
RV301	E-2
RV501	I-3
RV502	H-9

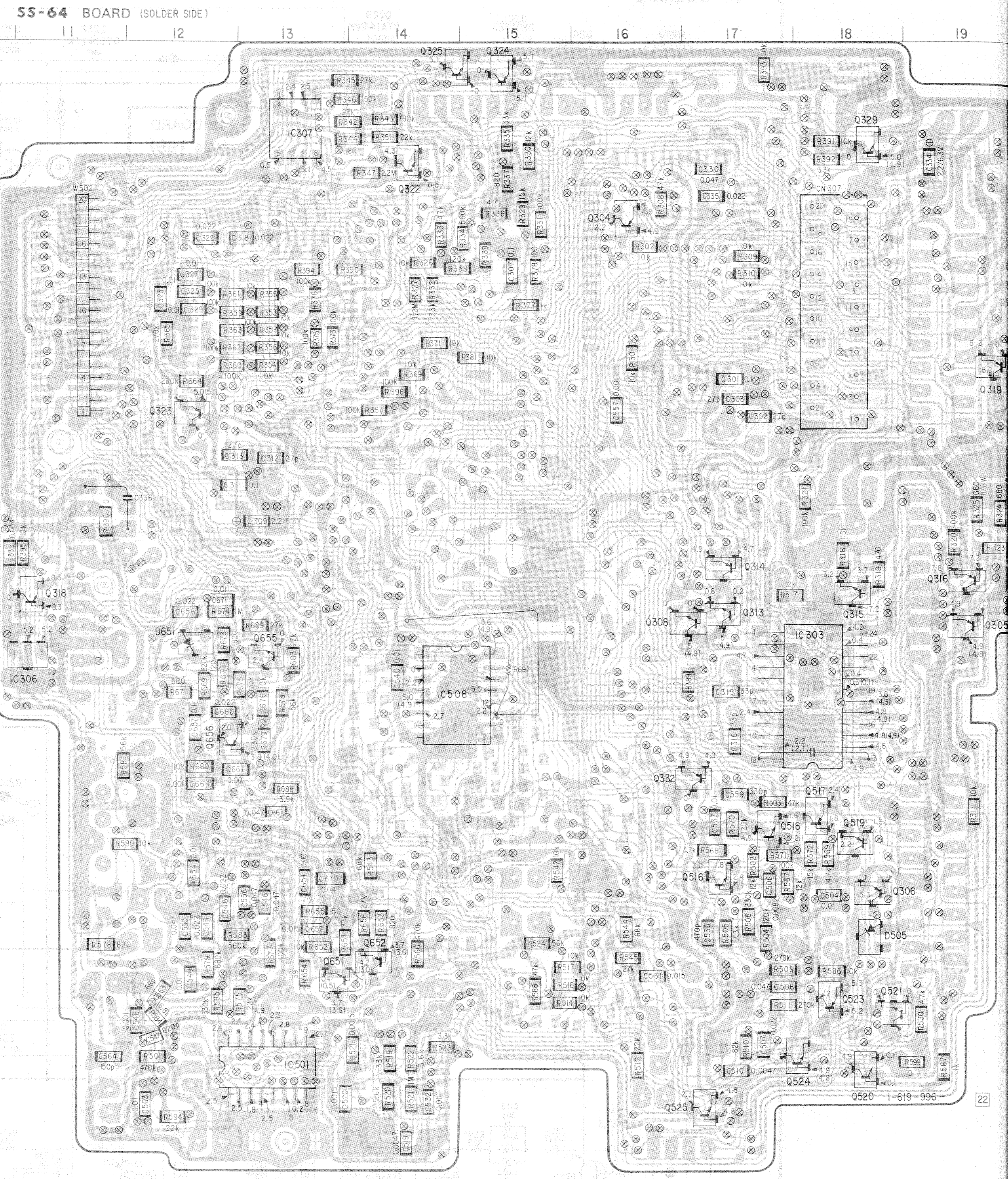
SS-64 BOARD (COMPONENT SIDE)


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
I
J
IC301
IC302
IC304
IC305
IC502
IC504
IC505
IC506
IC507
IC509
IC651
CN304
CN306
CN309
CN310
CN311
CN313
CN314
CN305
CN308
CN501
1-619-996-
22

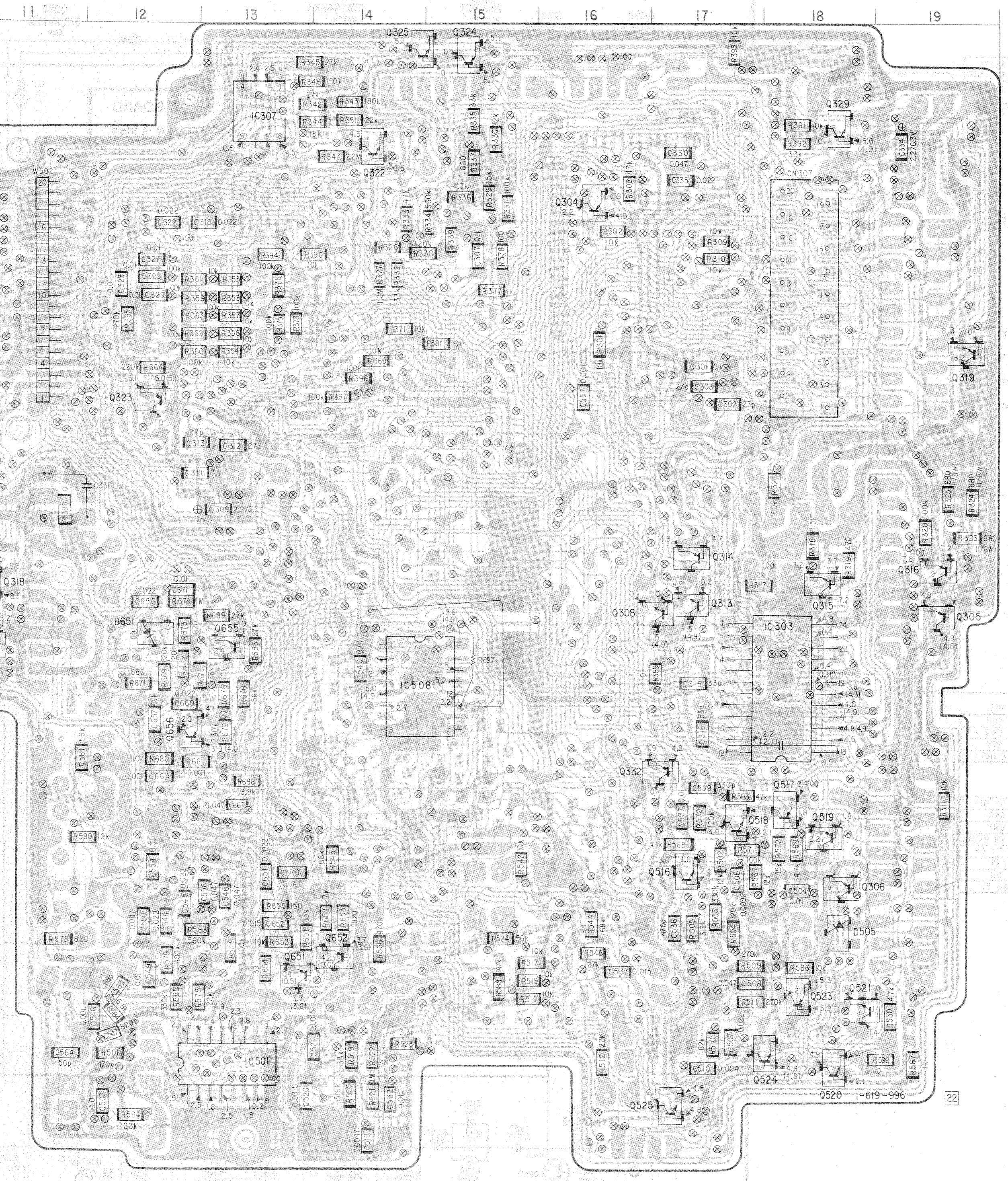
no mark : REC mode
( ) : PB mode
⟨ ⟩ : CUE mode
[ ] : REV mode


CN304 (WHT)
1
2
DEW SENSOR (M)
CN306 (BLK)
2
1
S901 CASSETTE LOCK
CN314 (YEL)
2
1
DEW SENSOR (S)
CN305 (BLK)
1
4
FG
PG

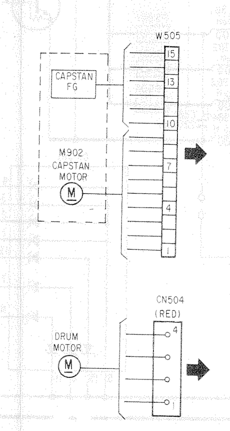
SS-64 BOARD (SOLDER SIDE)


11
12
13
14
15
16
17
18
19
IC303
IC306
IC307
IC501
IC508
CN307
1-619-996-
22

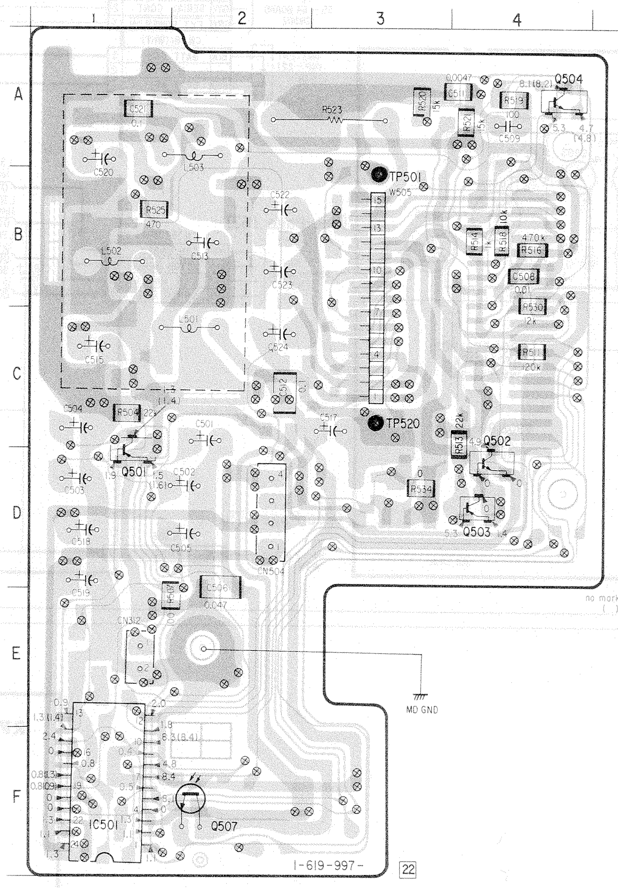
-64 BOARD (SOLDER SIDE)


IC307
IC303
IC508
IC501
Q305
Q306
Q308
Q313
Q314
Q315
Q316
Q318
Q319
Q322
Q323
Q324
Q325
Q329
Q332
Q504
Q505
Q516
Q517
Q518
Q519
Q520
Q521
Q523
Q524
Q525
Q651
Q652
Q655
Q656
CN307
1-619-996

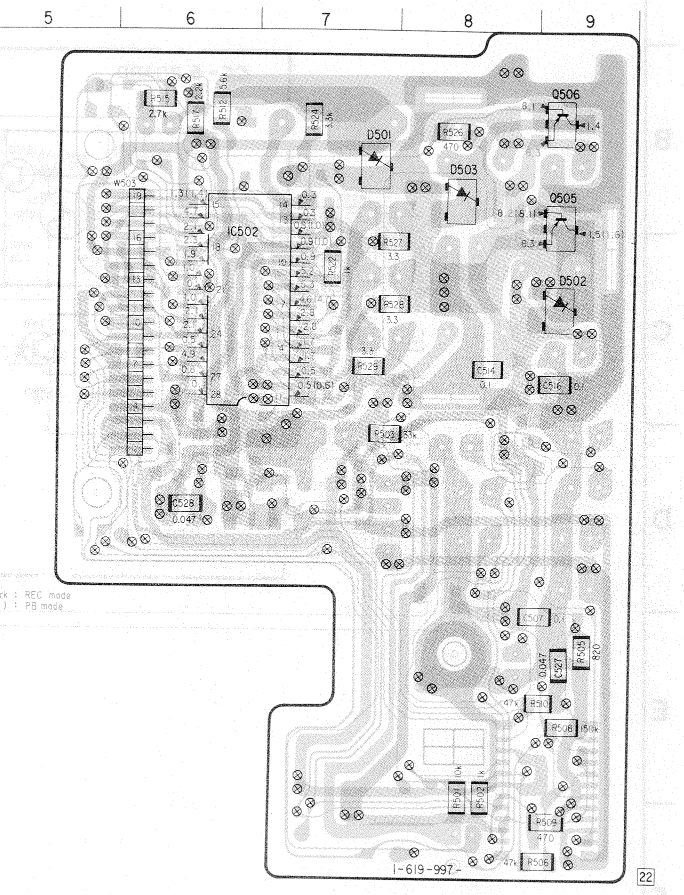
D501	A - 7
D502	B - 9
D503	B - 8
IC501	F - 1
IC502	B - 6
Q501	D - 1
Q502	D - 4
Q503	D - 4
Q504	A - 4
Q505	B - 9
Q506	A - 9
Q507	F - 2
TP501	B - 3
TP520	C - 3


W505
CAPSTAN FG
M902 CAPSTAN MOTOR
DRUM MOTOR
CN504 (RED)

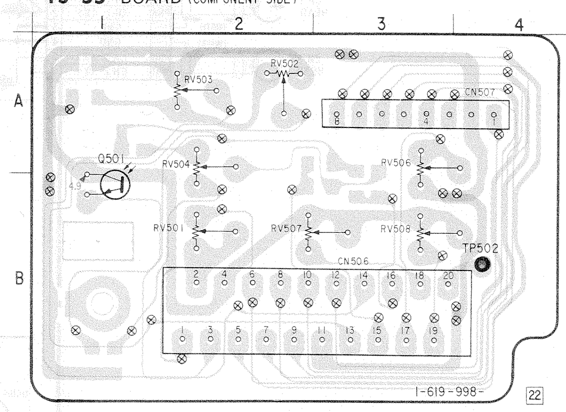
DR-36 BOARD (COMPONENT SIDE)


TP501
TP520
Q501
Q502
Q503
Q504
Q507
IC501
MD GND
1-619-997

DR-36 BOARD (SOLDER SIDE)

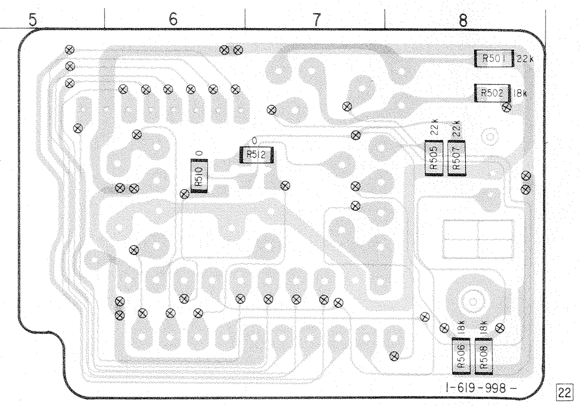

IC502
D501
D502
D503
Q505
Q506
1-619-997

TS-55 BOARD (COMPONENT SIDE)


Q501
RV501
RV502
RV503
RV504
RV506
RV507
RV508
CN506
CN507
TP502
1-619-998

Q501	B - 1
RV501	B - 2
RV502	A - 2
RV503	A - 2
RV504	A - 2
RV506	A - 3
RV507	B - 2
RV508	B - 3
TP502	B - 4

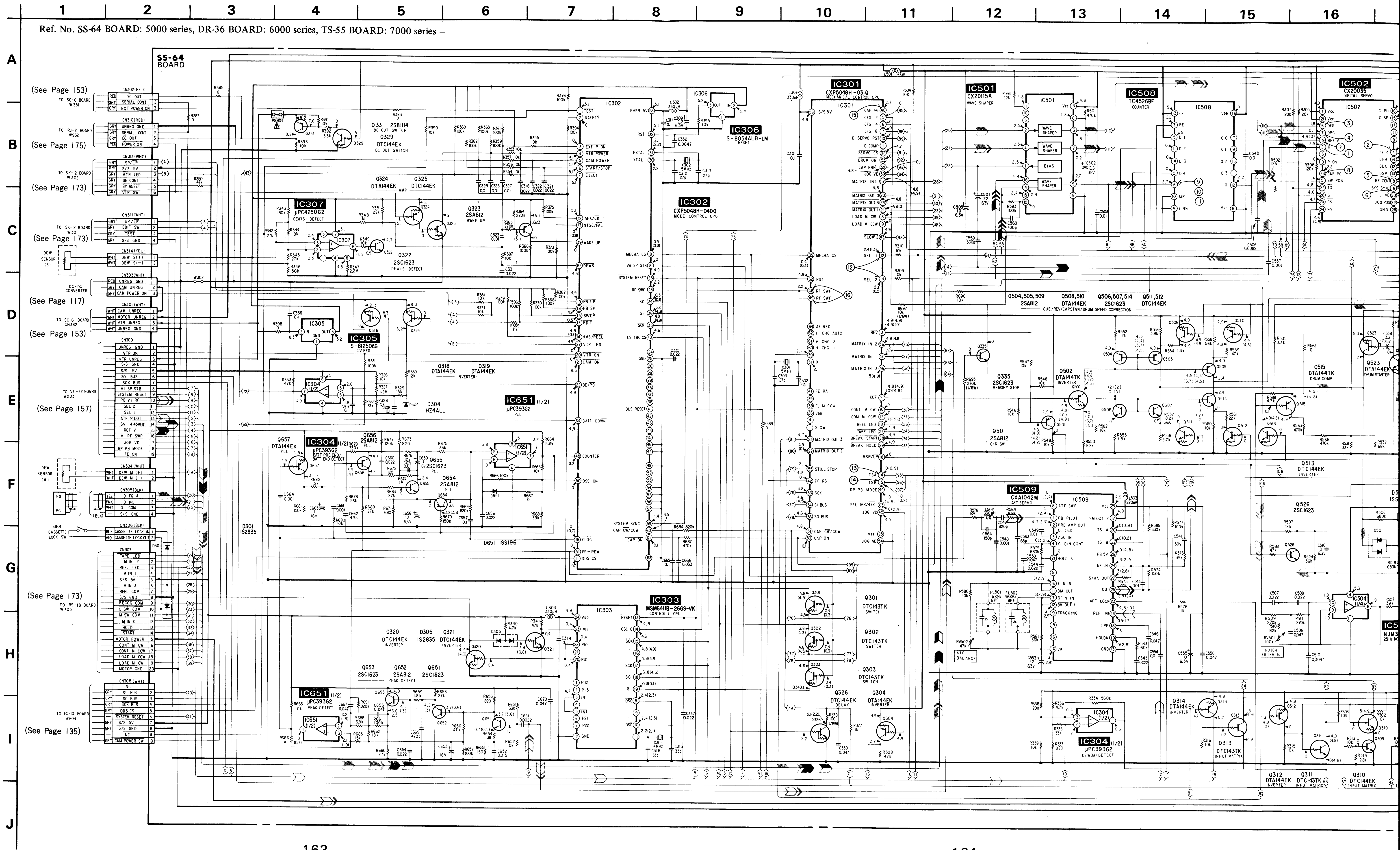
TS-55 BOARD (SOLDER SIDE)


R501
R502
R512
1-619-998

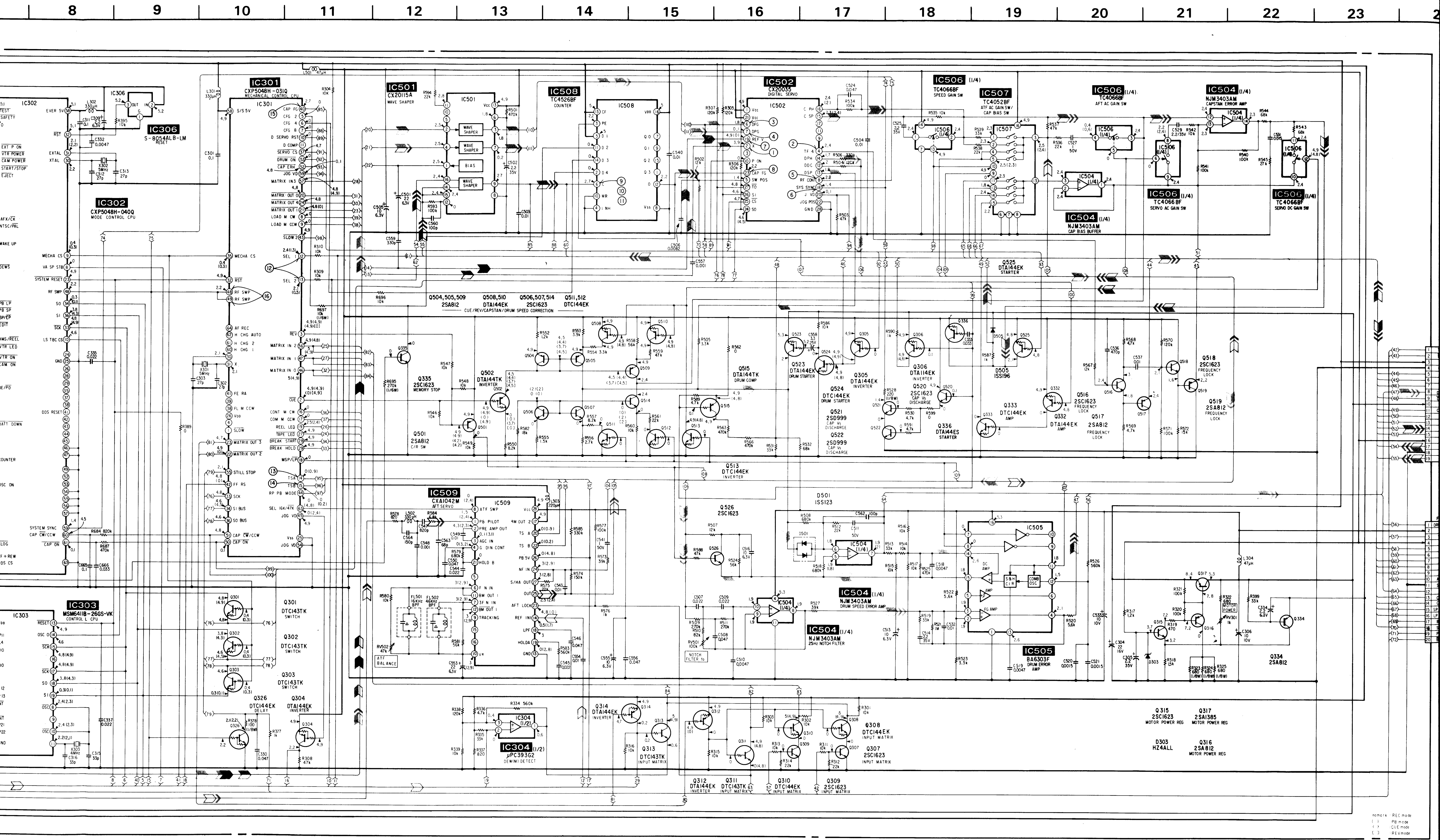
SERVO, SYSTEM CONTROL SERVO, SYSTEM CONTROL

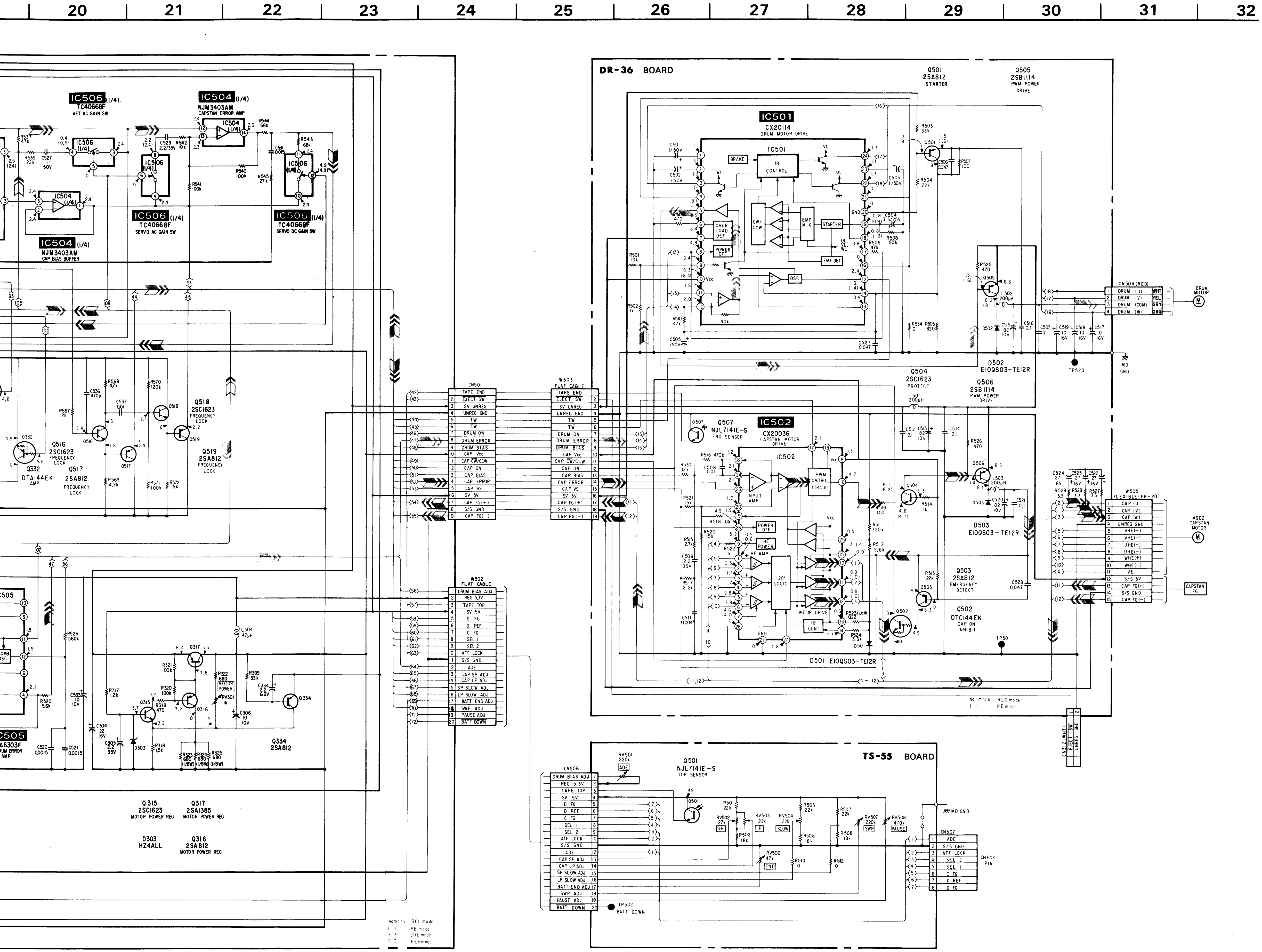
SS-64 (SYSTEM CONTROL/SERVO), DR-36 (DRUM/CAPSTAN MOTOR DRIVE, TAPE END SENSOR), TS-55 (TAPE TOP SENSOR) SCHEMATIC DIAGRAM

– Ref. No. SS-64 BOARD: 5000 series, DR-36 BOARD: 6000 series, TS-55 BOARD: 7000 series –


SS-64 BOARD
IC301 CXP5048H-031Q MECHANICAL CONTROL CPU
IC302 CXP5048H-040Q MODE CONTROL CPU
IC303 MSM6411B-26GS-VK CONTROL L CPU
IC304 (1/2) μPC393G2 BATT PRE END/ BATT END DETECT
IC304 (1/2) μPC393G2 DEW(M) DETECT
IC305 S-81250AG 5V REG
IC306 S-8054ALB-LM RESET
IC307 μPC4250G2 DEW(S) DETECT
IC501 CX20115A WAVE SHAPER
IC502 CX20035 DIGITAL SERVO
IC508 TC4526BF COUNTER
IC509 CXA1042M AFT SERVO
IC651 (1/2) μPC393G2 PLL
IC651 (1/2) μPC393G2 PEAK DETECT
(See Page 153)
(See Page 175)
(See Page 173)
(See Page 117)
(See Page 157)
(See Page 135)
DEW SENSOR (S)
DEW SENSOR (M)
S901 CASSETTE LOCK SW
D301 1S2835
D304 HZ4ALL
D651 1SS196
Q504,505,509 2SA812 Q508,510 DTA144EK Q506,507,514 2SC1623 Q511,512 DTC144EK CUE/REV/CAPSTAN/DRUM SPEED CORRECTION

(TAPE TOP SENSOR) SCHEMATIC DIAGRAM


8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
IC302
IC306
S-8054ALB-LM
RESET
IC301
CXP5048H-031Q
MECHANICAL CONTROL CPU
IC302
CXP5048H-040Q
MODE CONTROL CPU
IC501
CX20115A
WAVE SHAPER
WAVE SHAPER
BIAS
IC508
TC4526BF
COUNTER
IC502
CX20035
DIGITAL SERVO
IC506 (1/4)
TC4066BF
SPEED GAIN SW
IC507
TC4052BF
ATF AC GAIN SW/ CAP BIAS SW
IC506 (1/4)
TC4066BF
AFT AC GAIN SW
IC504 (1/4)
NJM3403AM
CAPSTAN ERROR AMP
IC504 (1/4)
NJM3403AM
CAP BIAS BUFFER
IC506 (1/4)
TC4066BF
SERVO AC GAIN SW
IC506 (1/4)
TC4066BF
SERVO DC GAIN SW
Q504,505,509 2SA812
Q508,510 DTA144EK
Q506,507,514 2SC1623
Q511,512 DTC144EK
CUE/REV/CAPSTAN/DRUM SPEED CORRECTION
Q335 2SC1623 MEMORY STOP
Q502 DTA144TK INVERTER
Q501 2SA812 C/R SW
Q515 DTA144TK DRUM COMP
Q513 DTC144EK INVERTER
Q523 DTA144EK DRUM STARTER
Q305 DTA144EK INVERTER
Q524 DTC144EK DRUM STARTER
Q521 2SD999 CAP Vs DISCHARGE
Q522 2SD999 CAP Vs DISCHARGE
Q306 DTA114EK INVERTER
Q520 2SC1623 CAP Vs DISCHARGE
Q336 DTA144ES STARTER
D505 1SS196
Q525 DTA144EK STARTER
Q333 DTC144EK AMP
Q332 DTA144EK AMP
Q516 2SC1623 FREQUENCY LOCK
Q517 2SA812 FREQUENCY LOCK
Q518 2SC1623 FREQUENCY LOCK
Q519 2SA812 FREQUENCY LOCK
IC509
CXA1042M
AFT SERVO
ATF BALANCE
Q526 2SC1623
D501 1SS123
IC504 (1/4)
NJM3403AM
DRUM SPEED ERROR AMP
IC504 (1/4)
NJM3403AM
25Hz NOTCH FILTER
NOTCH FILTER fo
IC505
BA6303F
DRUM ERROR AMP
IC303
MSM6411B-26GS-VK
CONTROL L CPU
Q301 DTC143TK SWITCH
Q302 DTC143TK SWITCH
Q303 DTC143TK SWITCH
Q326 DTC144EK DELAY
Q304 DTA144EK INVERTER
IC304 (1/2)
μPC393G2
DEWIMI DETECT
Q314 DTA144EK INVERTER
Q313 DTC143TK INPUT MATRIX
Q312 DTA144EK INVERTER
Q311 DTC143TK INPUT MATRIX
Q310 DTC144EK INPUT MATRIX
Q309 2SC1623 INPUT MATRIX
Q308 DTC144EK INPUT MATRIX
Q307 2SC1623 INPUT MATRIX
Q315 2SC1623 MOTOR POWER REG
Q317 2SA1385 MOTOR POWER REG
D303 HZ4ALL
Q316 2SA812 MOTOR POWER REG
Q334 2SA812
no mark : REC mode
( ) : PB mode
< > : CUE mode
[ ] : REV mode


20
21
22
23
24
25
26
27
28
29
30
31
32
IC506 (1/4) TC4066BF AFT AC GAIN SW
IC504 (1/4) NJM3403AM CAPSTAN ERROR AMP
IC504 (1/4) NJM3403AM CAP BIAS BUFFER
IC506 (1/4) TC4066BF SERVO AC GAIN SW
IC506 (1/4) TC4066BF SERVO DC GAIN SW
Q518 2SC1623 FREQUENCY LOCK
Q519 2SA812 FREQUENCY LOCK
Q516 2SC1623 FREQUENCY LOCK
Q517 2SA812 FREQUENCY LOCK
Q332 DTA144EK AMP
IC505
IC505 ...A6303F ...UM ERROR AMP
Q315 2SC1623 MOTOR POWER REG
Q317 2SA1385 MOTOR POWER REG
D303 HZ4ALL
Q316 2SA812 MOTOR POWER REG
Q334 2SA812
MOTOR POWER
no mark : REC mode
( ) : PB mode
{ } : CUE mode
[ ] : REV mode
CN501
W503 FLAT CABLE
TAPE END
EJECT SW
SV UNREG
UNREG GND
TW
TW
DRUM ON
DRUM ERROR
DRUM BIAS
CAP Vcc
CAP CW/CCW
CAP ON
CAP BIAS
CAP ERROR
CAP VS
SV 5V
CAP FG(+)
S/S GND
CAP FG(−)
W502 FLAT CABLE
DRUM BIAS ADJ
REG 5.3V
TAPE TOP
SV 5V
D FG
D REF
C FG
SEL 1
SEL 2
ATF LOCK
S/S GND
ADE
CAP SP ADJ
CAP LP ADJ
SP SLOW ADJ
LP SLOW ADJ
BATT END ADJ
SWP ADJ
PAUSE ADJ
BATT DOWN
DR-36 BOARD
Q501 2SA812 STARTER
Q505 2SB1114 PWM POWER DRIVE
IC501 CX20114 DRUM MOTOR DRIVE
BRAKE
IB CONTROL
OVER LOAD DET
POWER OFF
CW/CCW
EMF MIX
STARTER
EMF DET
OSC
Vcc
CN504 (RED)
DRUM (U) WHT
DRUM (V) YEL
DRUM (COM) GRY
DRUM (W) ORG
DRUM MOTOR
MD GND
TP520
D502 E10QS03-TE12R
Q504 2SC1623 PROTECT
Q506 2SB1114 PWM POWER DRIVE
Q507 NJL7141E-S END SENSOR
IC502 CX20036 CAPSTAN MOTOR DRIVE
INPUT AMP
PWM CONTROL CIRCUIT
POWER OFF
HE POWER
HE AMP
120° LOGIC
MOTOR DRIVE
IB CONT
D503 E10QS03-TE12R
Q503 2SA812 EMERGENCY DETECT
Q502 DTC144EK CAP ON INHIBIT
TP501
D501 E10QS03-TE12R
W505 FLEXIBLE (FP-20)
CAP (U)
CAP (V)
CAP (W)
UNREG GND
VHE(+)
VHE(−)
UHE(+)
UHE(−)
WHE(+)
WHE(−)
VE
S/S 5V
CAP FG(+)
S/S GND
CAP FG(−)
M902 CAPSTAN MOTOR
CAPSTAN FG
CN312 (WHT) UNREG GND
no mark : REC mode
( ) : PB mode
TS-55 BOARD
CN506
RV501 220k ADE
Q501 NJL7141E-S TOP SENSOR
RV502 27k SP
RV503 22k LP
RV504 22k SLOW
RV506 47k END
RV507 220k SWP
RV508 470k PAUSE
TP502 BATT DOWN
MD GND
CN507
ADE
S/S GND
ATF LOCK
SEL 2
SEL 1
C FG
D REF
D FG
CHECK PIN

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Signal Path

	REC	REC/PB	PB
Drum speed servo		➤	
Drum phase servo		➤»	
Drum servo (speed and phase)		➤»»	
Capstan speed servo		➤	
Capstan phase servo	➤»		▷»
Capstan servo (speed and phase)		➤»»	
Pilot signal	➤	➤	▷

Note (Printed Wiring Board):

- ⊗ : mark is slew hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the pattern side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (SK-12: Q301, 302, 303, RS-18: Q302, 303, 304, 307, 310, 312, 314) transistor with resistors.
  Refer to the SK-12, RS-18 boards schematic diagram for digital transistor.

Note

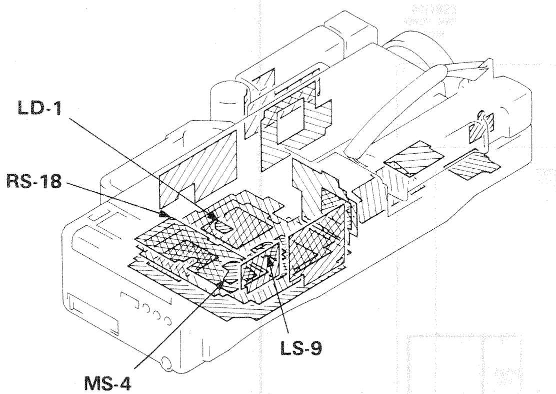
Soldering side: Parts on the soldering side being seen from the soldering are stated.

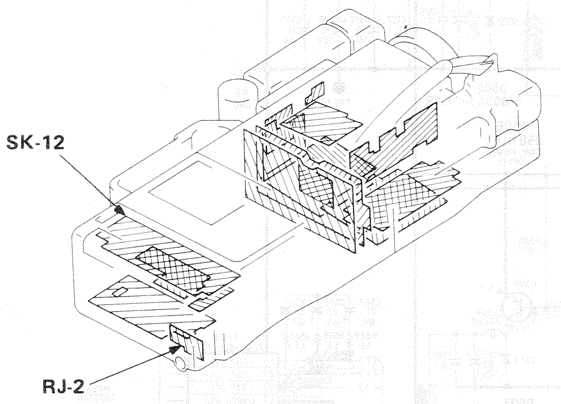
Component side: Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

* Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).

* Pattern being seen in the state of the rear surface side is indicated in green pattern.

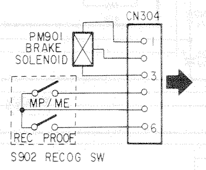

LD-1
RS-18
LS-9
MS-4



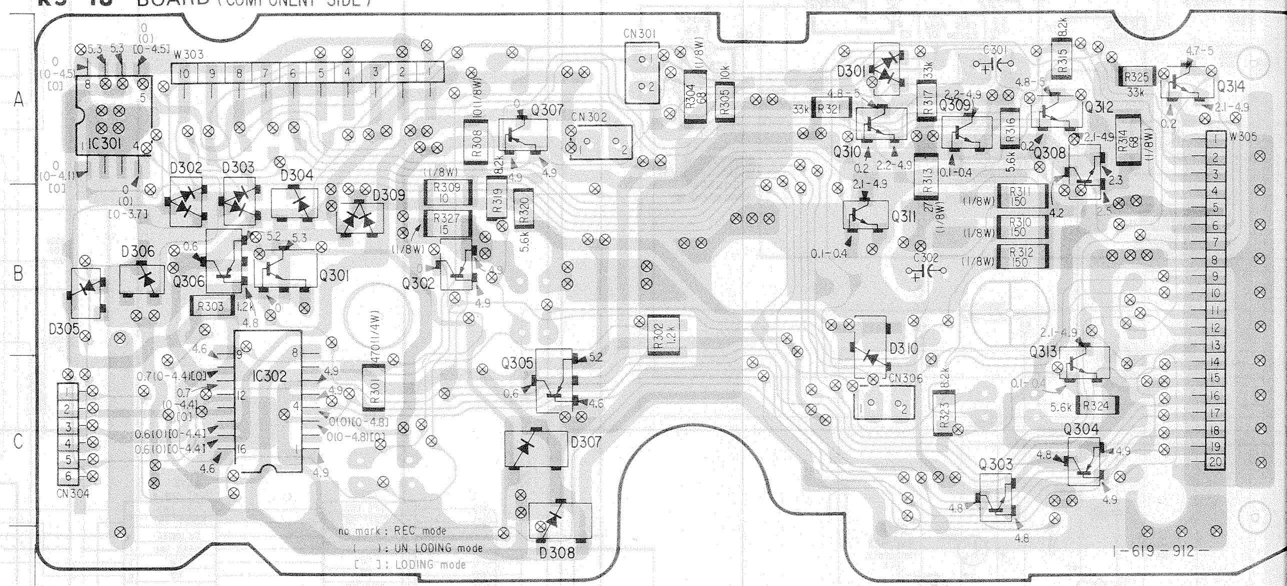
RS-18 (CONTROL/LOADING MOTOR, SOLENOID DRIVE), LS-9 (LOADING SWITCH), MS-4 (MODE SWITCH, CONTROL MOTOR), LD-1 (TAPE TOP/E

– Ref. No. RS-18 BOARD: 4000 series, MS-4 BOARD 5000series, LD-1, LS-9 BOARDS: 6000 series, SK-12, RJ-2 BOARDS: 7000 series –

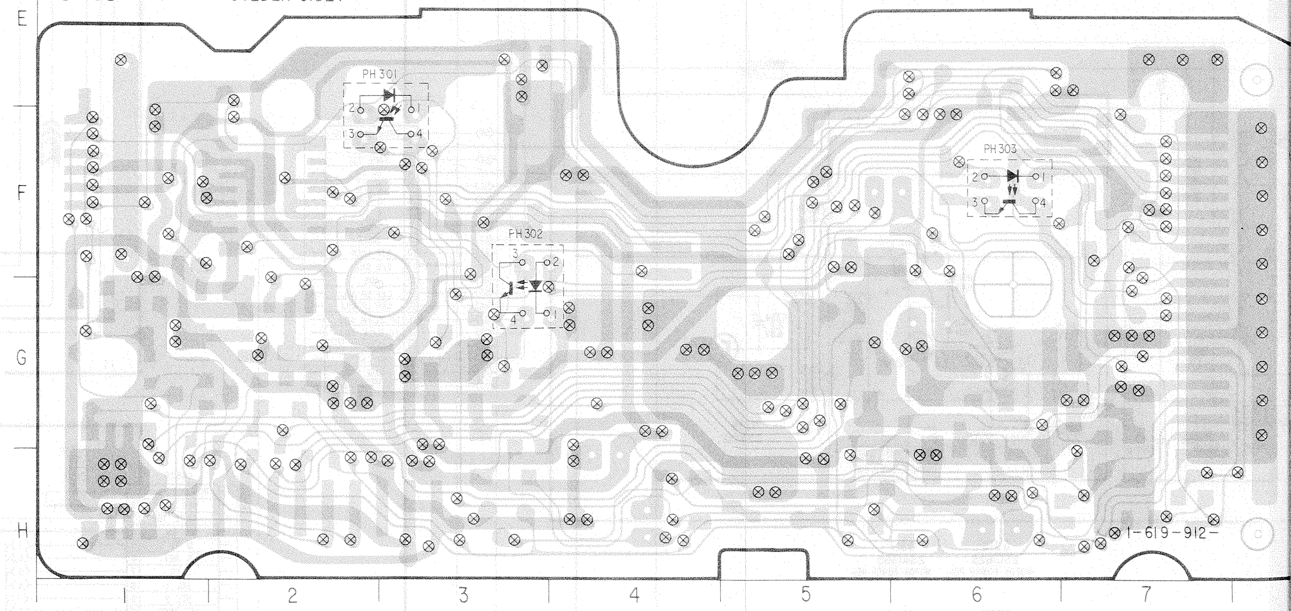
D301	A - 5
D302	B - 1
D303	B - 2
D304	B - 2
D305	B - 1
D306	B - 1
D307	C - 4
D308	C - 4
D309	B - 2
D310	B - 6
IC301	A - 1
IC302	C - 2
PH301	F - 3
PH302	G - 3
PH303	F - 6
Q301	B - 2
Q302	B - 3
Q303	C - 6
Q304	C - 7
Q305	C - 4
Q306	B - 2
Q307	A - 3
Q308	A - 7
Q309	A - 6
Q310	A - 5
Q311	B - 5
Q312	A - 7
Q313	C - 7
Q314	A - 7


CN304
PM901
BRAKE
SOLENOID
1
3
6
MP/ME
REC PROOF
S902 RECOG SW

RS-18 BOARD (COMPONENT SIDE)


A
B
C
D
IC301
IC302
D301
D302
D303
D304
D305
D306
D307
D308
D309
D310
Q301
Q302
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q310
Q311
Q312
Q313
Q314
CN301
CN302
CN304
CN306
W303
W305
no mark : REC mode
( ) : UN LODING mode
[ ] : LODING mode
1-619-912-

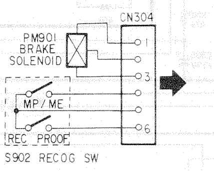
RS-18 BOARD (SOLDER SIDE)


E
F
G
H
PH301
PH302
PH303
1-619-912-
1
2
3
4
5
6
7

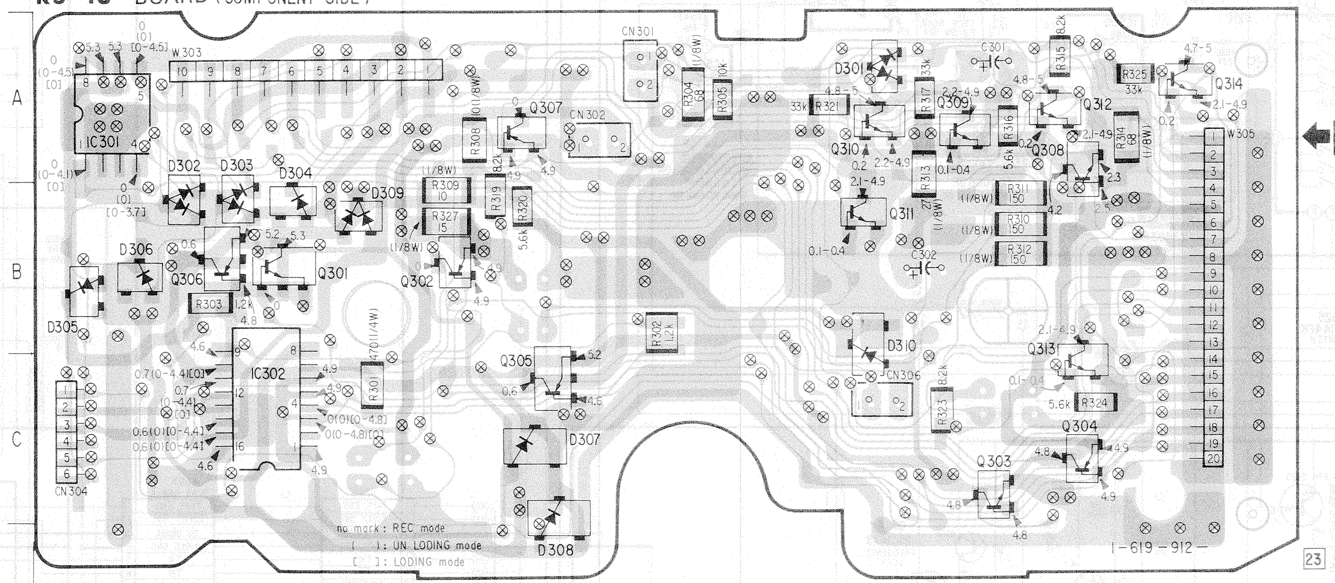
NTROL/LOADING MOTOR, SOLENOID DRIVE), LS-9 (LOADING SWITCH), MS-4 (MODE SWITCH, CONTROL MOTOR), LD-1 (TAPE TOP/END LED), SK-12 (DISPLAY, FUNCTION CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL) PRINTED WIRING BOARD

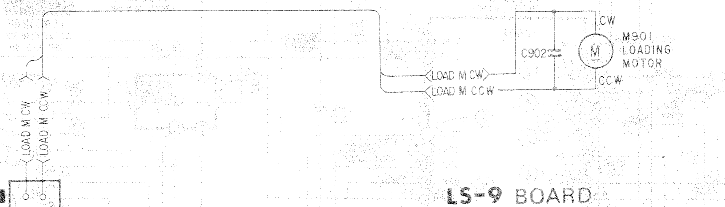
S-18 BOARD: 4000 series, MS-4 BOARD. 5000series, LD-1, LS-9 BOARDS: 6000 series, SK-12, RJ-2 BOARDS: 7000 series –

	A - 5
2	B - 1
3	B - 2
4	B - 2
5	B - 1
6	B - 1
7	C - 4
8	C - 4
9	B - 2
0	B - 6
1	A - 1
2	C - 2
01	F - 3
02	G - 3
03	F - 6
1	B - 2
2	B - 3
3	C - 6
4	C - 7
5	C - 4
6	B - 2
7	A - 3
8	A - 7
9	A - 6
0	A - 5
1	B - 5
2	A - 7
3	C - 7
4	A - 7

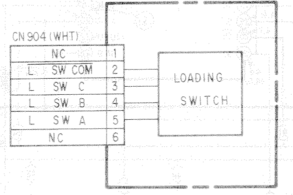

CN304
PM901
BRAKE
SOLENOID
1
3
6
MP/ME
REC PROOF
S902 RECOG SW

RS-18 BOARD (COMPONENT SIDE)


A
B
C
D
IC301
IC302
D302
D303
D304
D305
D306
D307
D308
D309
D310
D301
Q301
Q302
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q310
Q311
Q312
Q313
Q314
R303
R308
R309
R311
R312
R313
R315
R316
R317
R319
R320
R321
R322
R323
R324
R325
R327
C301
C302
CN301
CN302
CN304
CN306
W303
W305
no mark : REC mode
[ ] : UN LODING mode
( ) : LODING mode
1-619-912-
23

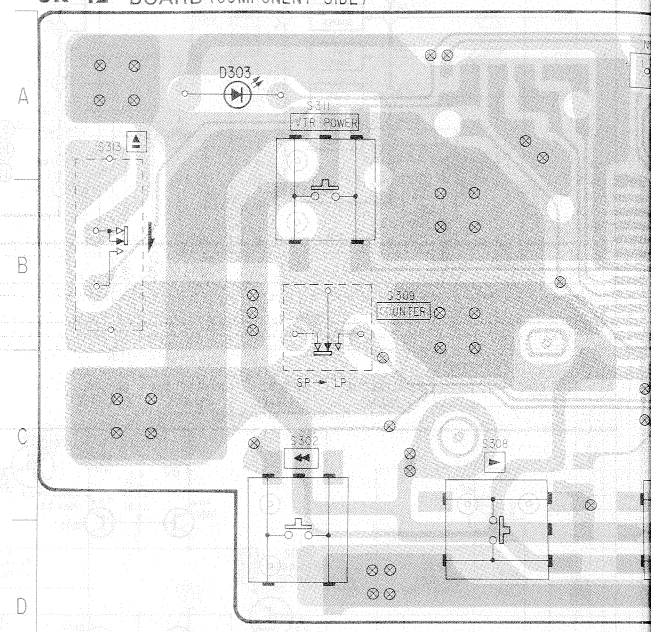

LOAD M CW
LOAD M CCW
CN302
C902
M901
LOADING
MOTOR
CW
CCW

LS-9 BOARD

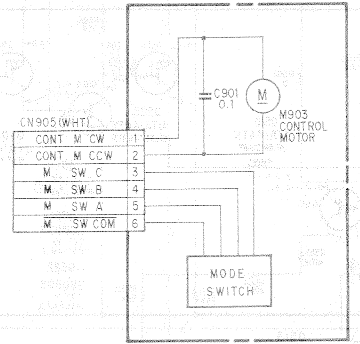

CN904 (WHT)
NC 1
L SW COM 2
L SW C 3
L SW B 4
L SW A 5
NC 6
LOADING
SWITCH

D301	B - 8
D302	H - 7
D303	A - 2
IC301	G - 5
IC302	G - 7
Q301	B - 8
Q302	C - 7
Q303	H - 8
TP301	B - 9

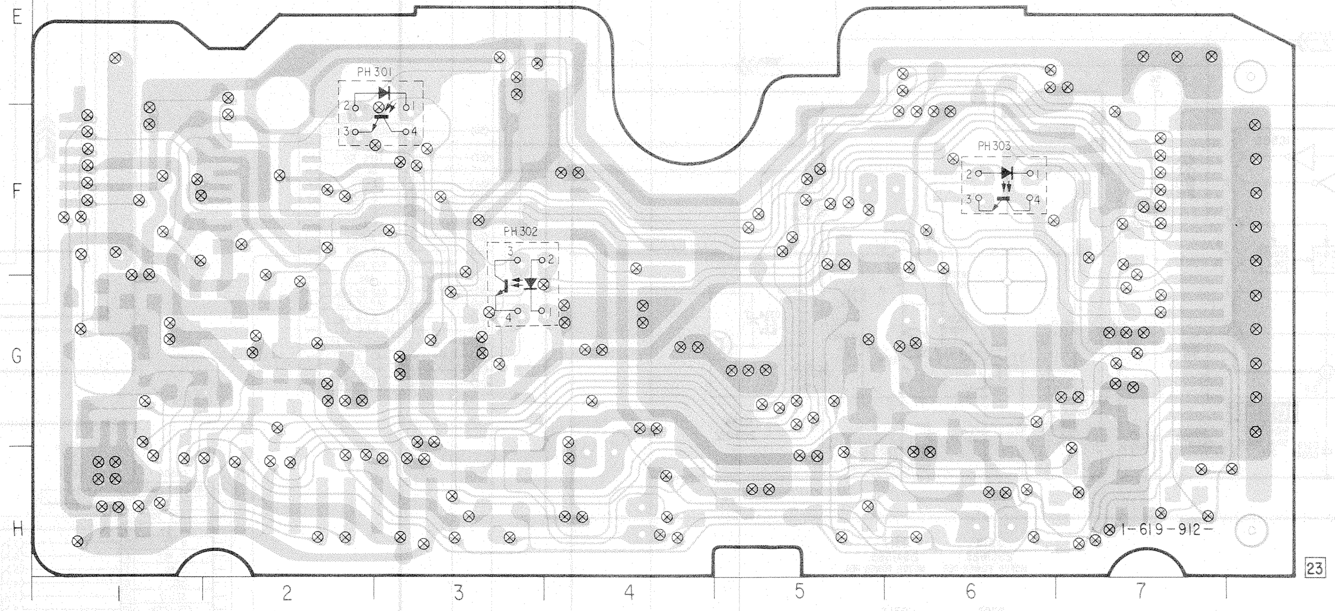
SK-12 BOARD (COMPONENT SIDE)


A
B
C
D
D303
S313
S311
VTR POWER
S309
COUNTER
SP LP
S302
S308

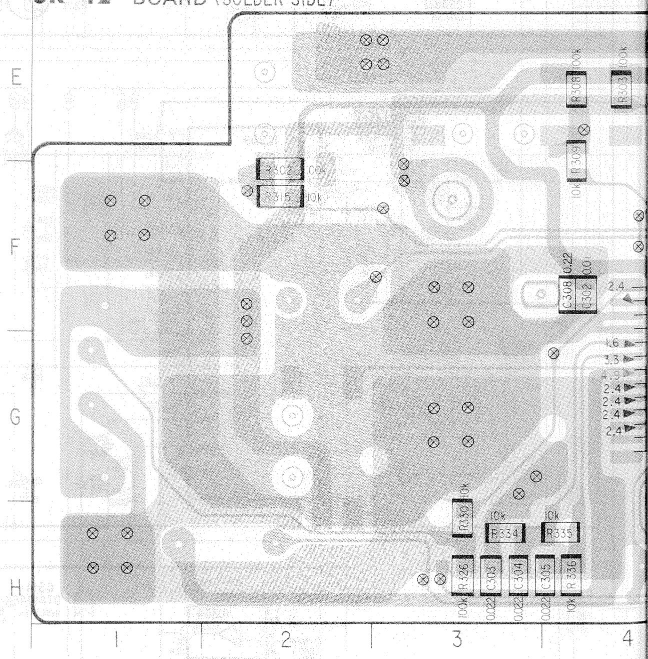
MS-4 BOARD


CN905 (WHT)
CONT M CW 1
CONT M CCW 2
M SW C 3
M SW B 4
M SW A 5
M SW COM 6
C901
0.1
M903
CONTROL
MOTOR
MODE
SWITCH

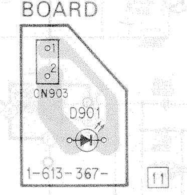
RS-18 BOARD (SOLDER SIDE)


E
F
G
H
PH301
PH302
PH303
1-619-912-
23
1
2
3
4
5
6
7

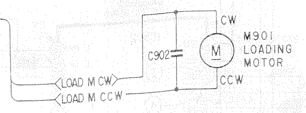
SK-12 BOARD (SOLDER SIDE)


E
F
G
H
R302
R315
R330
R334
R335
1
2
3
4

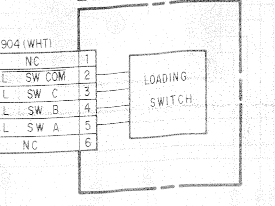
LD-1
BOARD


CN903
D901
1-613-367-
11

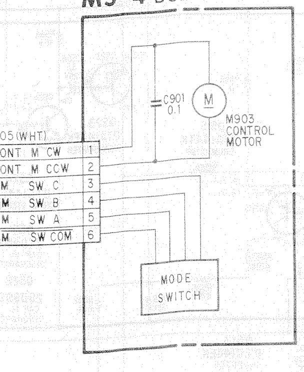
ON CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL) PRINTED WIRING BOARD


CW
M901
LOADING
MOTOR
C902
M
CCW
LOAD M CW
LOAD M CCW

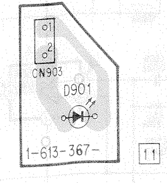
LS-9 BOARD


904 (WHT)
NC 1
L SW COM 2
L SW C 3
L SW B 4
L SW A 5
NC 6
LOADING SWITCH

MS-4 BOARD

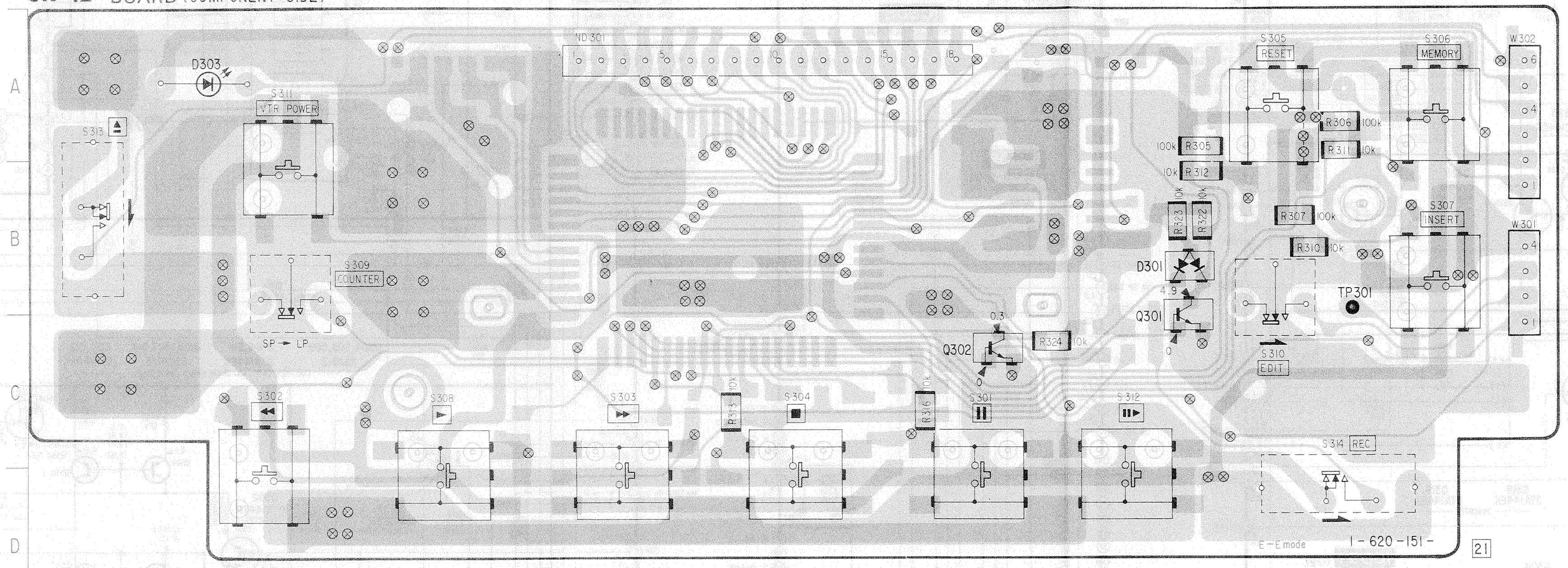

C901
0.1
M
M903
CONTROL
MOTOR
05 (WHT)
ONT M CW 1
ONT M CCW 2
M SW C 3
M SW B 4
M SW A 5
M SW COM 6
MODE SWITCH

LD-1
BOARD

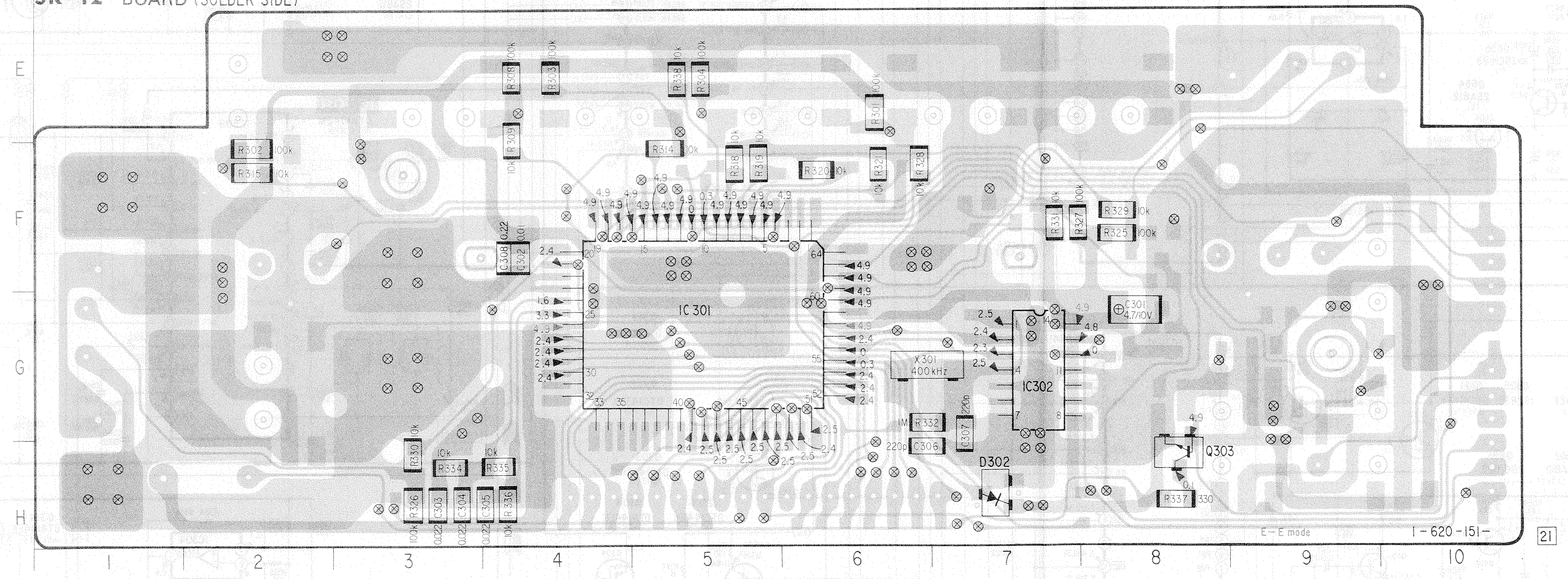

1
2
CN903
D901
1-613-367-
11

D301	B-8
D302	H-7
D303	A-2
IC301	G-5
IC302	G-7
Q301	B-8
Q302	C-7
Q303	H-8
TP301	B-9

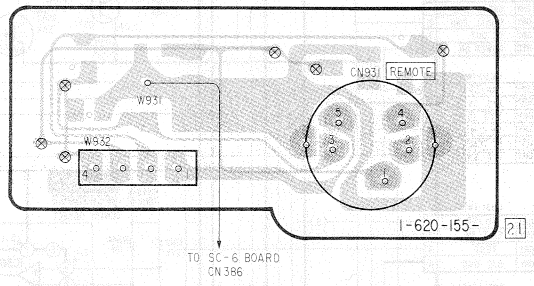
SK-12 BOARD (COMPONENT SIDE)


A
B
C
D
D303
S311
VTR POWER
S313
ND301
S309
COUNTER
SP → LP
S302
S308
S303
S304
R313 10K
R316 10k
S301
S312
Q302
0.3
0
R324 10k
S305
RESET
S306
MEMORY
W302
R305 100k
R312 10k
R306 100k
R311 10k
R323 10k
R322 10k
R307 100k
R310 10k
D301
4.9
Q301
0
S310
EDIT
TP301
S307
INSERT
W301
S314 REC
E-E mode
1-620-151-
21

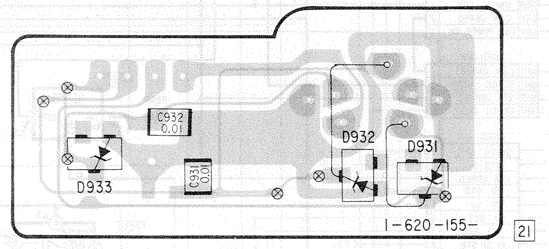
SK-12 BOARD (SOLDER SIDE)


E
F
G
H
1
2
3
4
5
6
7
8
9
10
R302 100k
R315 10k
R308 100k
R303 100k
R309 10k
R338 10k
R304 100k
R314 10k
R318 10k
R319 10k
R320 10k
R301 100k
R321 10k
R328 10k
C308 0.22
C302 0.01
IC301
R330 10k
R334 10k
R335 10k
R326 100k
C303 0.022
C304 0.022
C305 0.022
R336 10k
R331 10k
R327 100k
R329 10k
R325 100k
C301 4.7/10V
X301 400kHz
IC302
R332 1M
C306 220p
C307 220p
D302
Q303
R337 330
E-E mode
1-620-151-
21

RJ·2 BOARD (COMPONENT SIDE)


W931
W932
CN931
REMOTE
TO SC-6 BOARD
CN386
1-620-155-
21

RJ-2 BOARD (SOLDER SIDE)

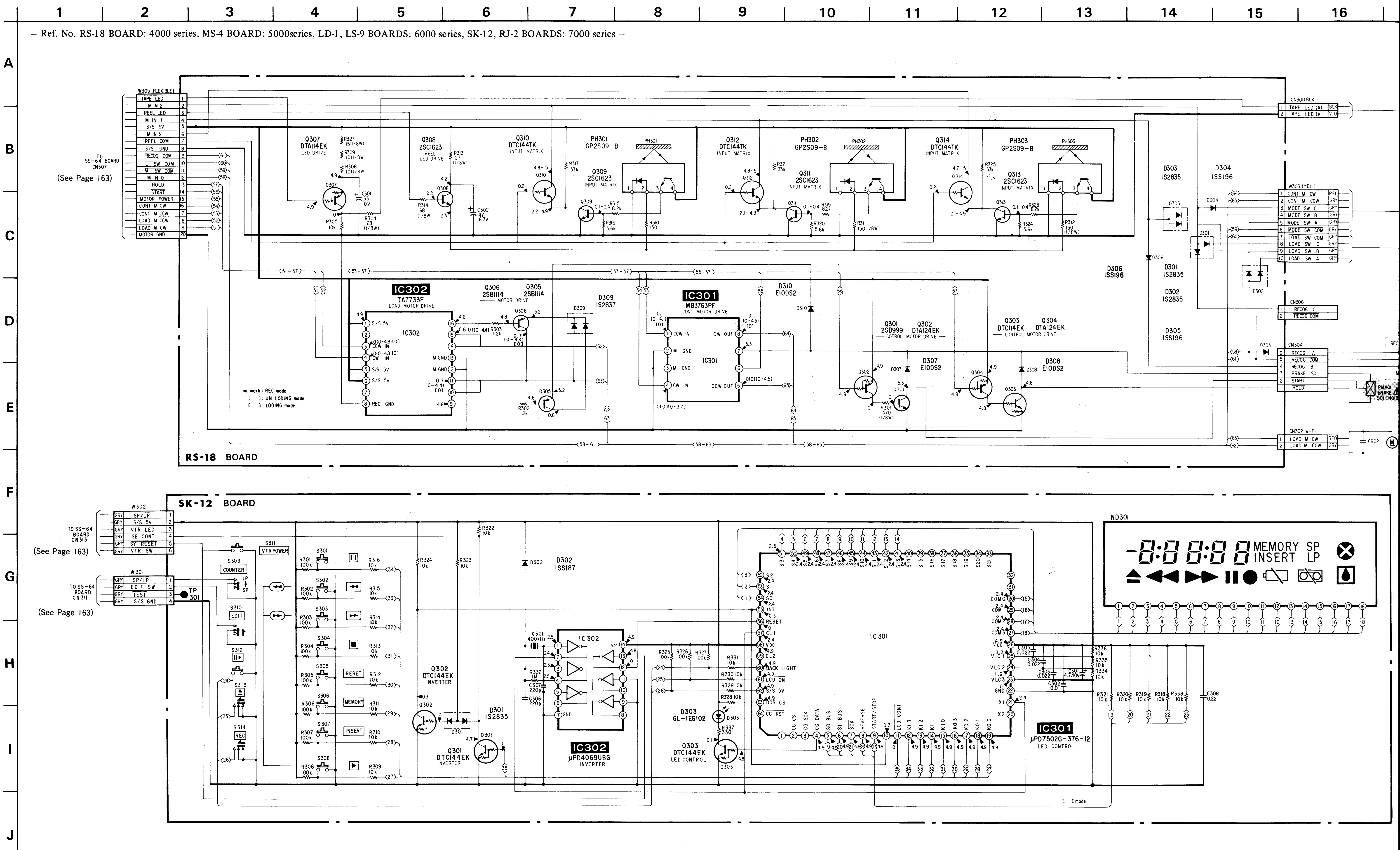

C932
0.01
C931
0.01
D933
D932
D931
1-620-155-
21

SERVO, MECHANISM CONTROL

SERVO, MECHANISM CONTROL

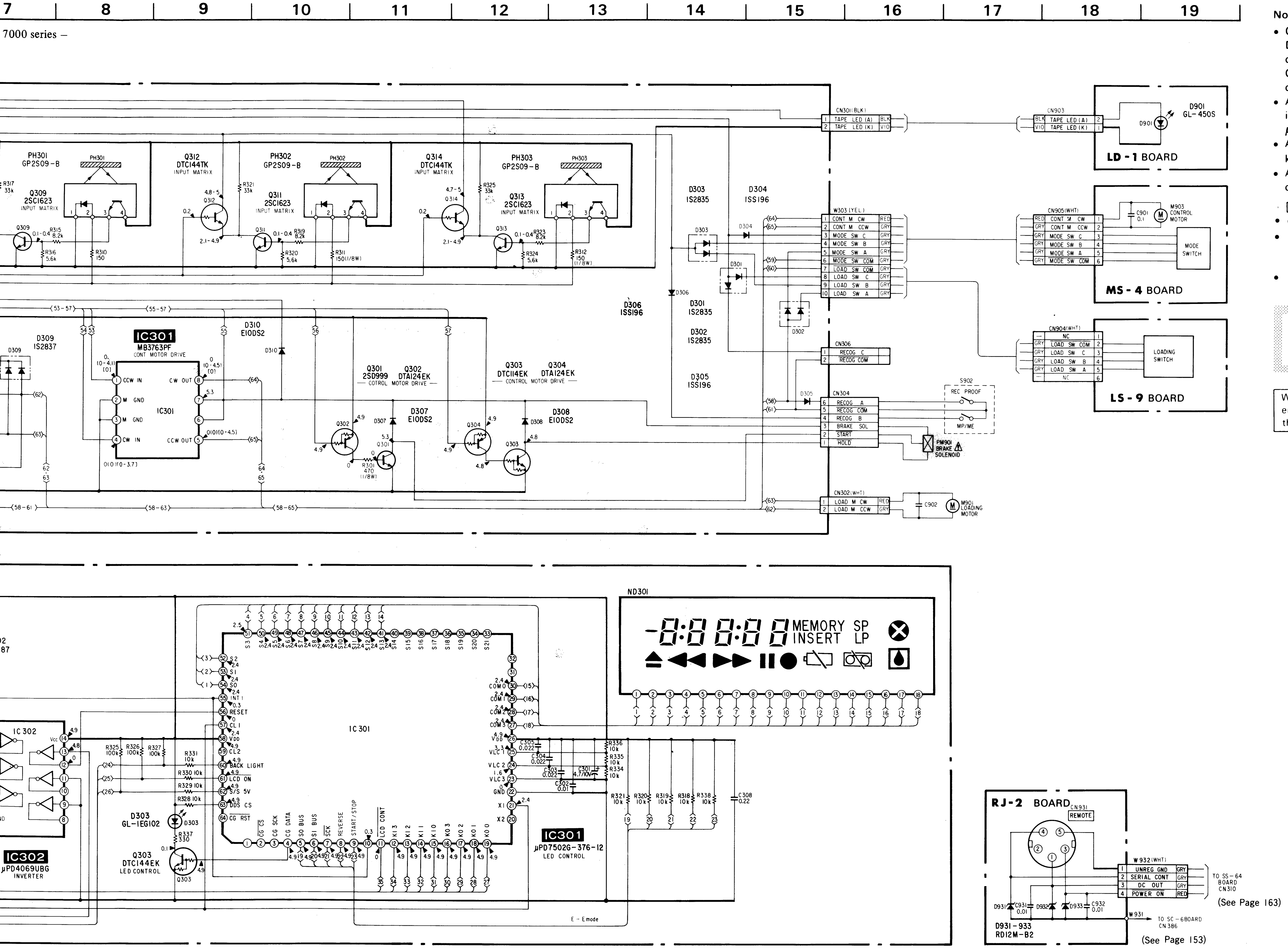
RS-18 (CONTROL/LOADING MOTOR, SOLENOID DRIVE), LS-9 (LOADING SWITCH), MS-4 (MODE SWITCH, CONTROL MOTOR), LD-1 (TAPE TOP/END LED), SK-12 (DISPLAY, FUNCTION CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL)

– Ref. No. RS-18 BOARD: 4000 series, MS-4 BOARD: 5000series, LD-1, LS-9 BOARDS: 6000 series, SK-12, RJ-2 BOARDS: 7000 series –


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
W305 (FLEXIBLE)
TAPE LED
M IN 2
REEL LED
M IN 1
S/S 5V
M IN 3
REEL COM
S/S GND
RECOG COM
L SW COM
M SW COM
M IN 0
HOLD
START
MOTOR POWER
CONT M CW
CONT M CCW
LOAD M CCW
LOAD M CW
MOTOR GND
TO SS-64 BOARD CN307
(See Page 163)
Q307 DTA114EK LED DRIVE
Q308 2SC1623 REEL LED DRIVE
Q310 DTC144TK INPUT MATRIX
PH301 GP2S09-B
Q309 2SC1623 INPUT MATRIX
Q312 DTC144TK INPUT MATRIX
PH302 GP2S09-B
Q311 2SC1623 INPUT MATRIX
Q314 DTC144TK INPUT MATRIX
PH303 GP2S09-B
Q313 2SC1623 INPUT MATRIX
D303 1S2835
D304 1SS196
CN301 (BLK)
TAPE LED (A)
TAPE LED (K)
W303 (YEL)
CONT M CW
CONT M CCW
MODE SW C
MODE SW B
MODE SW A
MODE SW COM
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
D306 1SS196
D301 1S2835
D302 1S2835
D305 1SS196
IC302 TA7733F LOAD MOTOR DRIVE
Q306 2SB1114
Q305 2SB1114
MOTOR DRIVE
D309 1S2837
IC301 MB3763PF CONT MOTOR DRIVE
D310 E10DS2
Q301 2SD999
Q302 DTA124EK
COTROL MOTOR DRIVE
Q303 DTC114EK
Q304 DTA124EK
CONTROL MOTOR DRIVE
D307 E10DS2
D308 E10DS2
CN306
RECOG C
RECOG COM
CN304
RECOG A
RECOG COM
RECOG B
BRAKE SOL
START
HOLD
PM901 BRAKE SOLENOID
CN302 (WHT)
LOAD M CW
LOAD M CCW
C902
M
no mark : REC mode
( ) : UN LODING mode
[ ] : LODING mode
RS-18 BOARD
SK-12 BOARD
W302
SP/LP
S/S 5V
VTR LED
SE CONT
SY RESET
VTR SW
TO SS-64 BOARD CN313
(See Page 163)
W301
SP/LP
EDIT SW
TEST
S/S GND
TO SS-64 BOARD CN311
(See Page 163)
TP 301
S311 VTR POWER
S309 COUNTER
S310 EDIT
S312
S313
S314 REC
S301 S302 S303 S304 S305 S306 S307 S308
RESET
MEMORY
INSERT
Q302 DTC144EK INVERTER
Q301 DTC144EK INVERTER
D301 1S2835
D302 1SS187
X301 400kHz
IC302 μPD4069UBG INVERTER
D303 GL-1EG102
Q303 DTC144EK LED CONTROL
IC301 μPD7502G-376-12 LED CONTROL
RESET
BACK LIGHT
LCD ON
S/S 5V
BUS CS
CG RST
ND301
MEMORY SP
INSERT LP
E - E mode

CH, CONTROL MOTOR), LD-1 (TAPE TOP/END LED), SK-12 (DISPLAY, FUNCTION CONTROL), RJ-2 (WIRED REMOTE CONTROL TERMINAL)

7000 series –


7
8
9
10
11
12
13
14
15
16
17
18
19
PH301 GP2S09-B
Q312 DTC144TK INPUT MATRIX
PH302 GP2S09-B
Q314 DTC144TK INPUT MATRIX
PH303 GP2S09-B
Q309 2SC1623 INPUT MATRIX
Q311 2SC1623 INPUT MATRIX
Q313 2SC1623 INPUT MATRIX
D303 IS2835
D304 ISS196
D306 ISS196
D301 IS2835
D302 IS2835
D305 ISS196
D309 IS2837
D310 E10DS2
IC301 MB3763PF CONT MOTOR DRIVE
Q301 2SD999
Q302 DTA124EK
COTROL MOTOR DRIVE
Q303 DTC114EK
Q304 DTA124EK
CONTROL MOTOR DRIVE
D307 E10DS2
D308 E10DS2
CN301(BLK)
TAPE LED (A)
TAPE LED (K)
W303 (YEL)
CONT M CW
CONT M CCW
MODE SW C
MODE SW B
MODE SW A
MODE SW COM
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
CN306
RECOG C
RECOG COM
CN304
RECOG A
RECOG COM
RECOG B
BRAKE SOL
START
HOLD
S902 REC PROOF
MP/ME
PM901 BRAKE SOLENOID
CN302(WHT)
LOAD M CW
LOAD M CCW
C902
M901 LOADING MOTOR
CN903
D901 GL-450S
LD-1 BOARD
CN905(WHT)
C901 0.1
M903 CONTROL MOTOR
MODE SWITCH
MS-4 BOARD
CN904(WHT)
NC
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
LOADING SWITCH
LS-9 BOARD
ND301
MEMORY SP
INSERT LP
IC 302
IC302 μPD4069UBG INVERTER
D303 GL-1EG102
Q303 DTC144EK LED CONTROL
IC 301
IC301 μPD7502G-376-12 LED CONTROL
RESET
BACK LIGHT
LCD ON
S/S 5V
DDS CS
CG RST
CG CS
CG SCK
CG DATA
SO BUS
SI BUS
SCK
REVERSE
START/STOP
LCD CONT
E - Emode
RJ-2 BOARD
CN931 REMOTE
W932(WHT)
UNREG GND
SERIAL CONT
DC OUT
POWER ON
TO SS-64 BOARD CN310
(See Page 163)
W931
TO SC-68OARD CN386
(See Page 153)
D931-933 RD12M-B2

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance. kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ▬ : B+ line.
- **The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .**
- **All voltage are dc mesured with a VOM (10MΩ)**

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

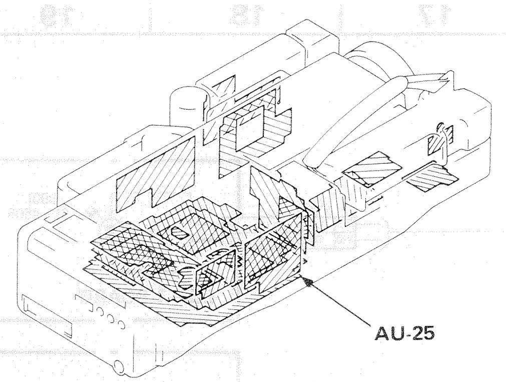
Note (Printed Wiring Board):

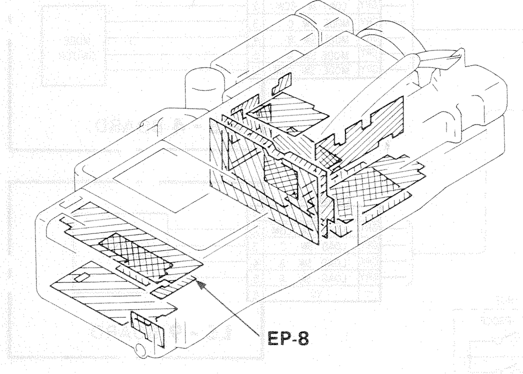
- ⊗ : mark is through hole.
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ Pattern.
- Digital transistor (AU-25: Q404, 412, 414) transistor with resistors.
  Refer to the AU-25 board schematic diagram for digital transistor.

Note	
Soldering side:	Parts on the soldering side being seen from the soldering are stated.
Component side:	Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.





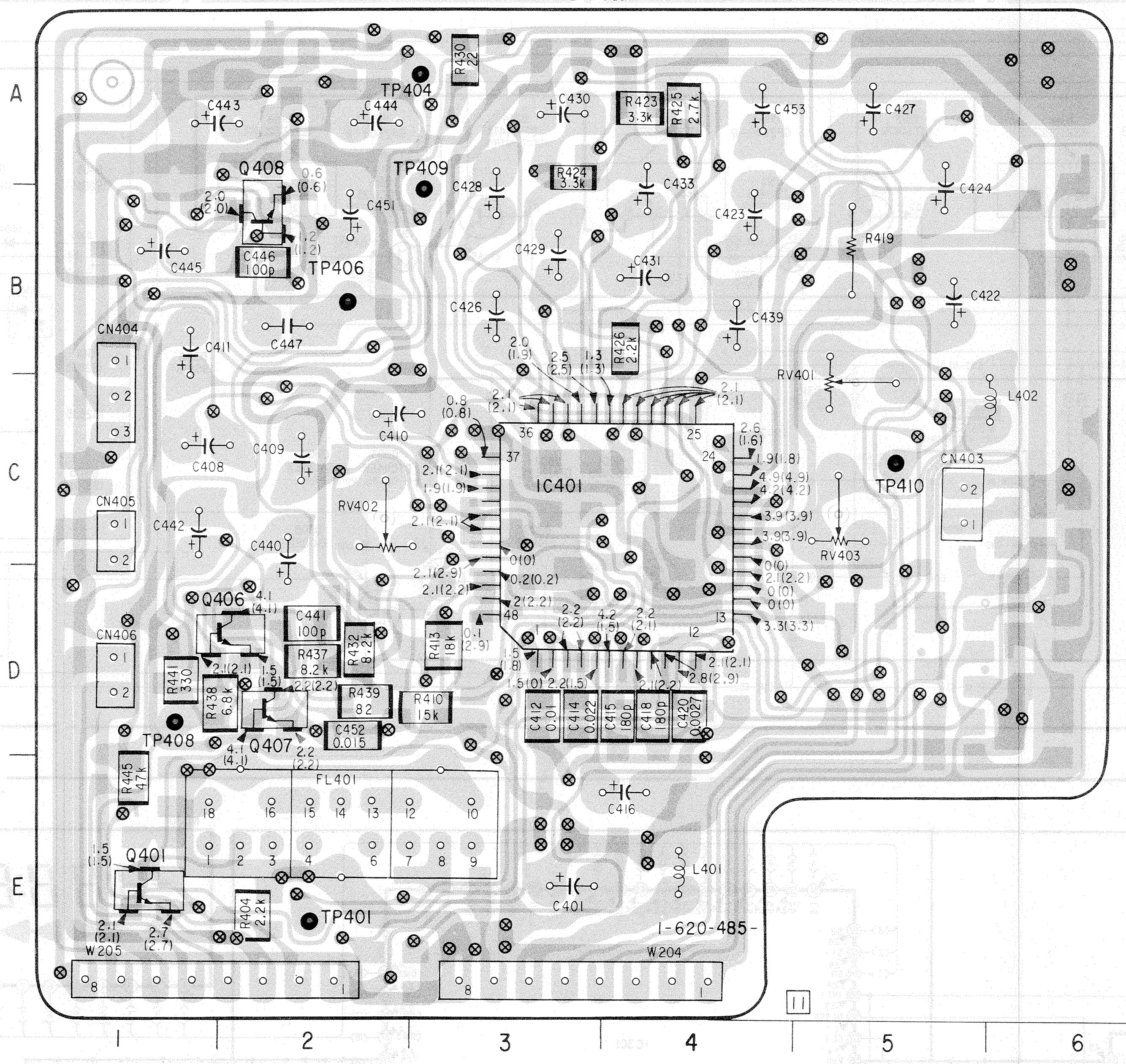
AU-25 (AUDIO SIGNAL PROCESS), EP-8 (EARPHONE JACK) PRINTED WIRING BOARD

– Ref. No. AU-25, EP-8 BOARDS: 8000 series –

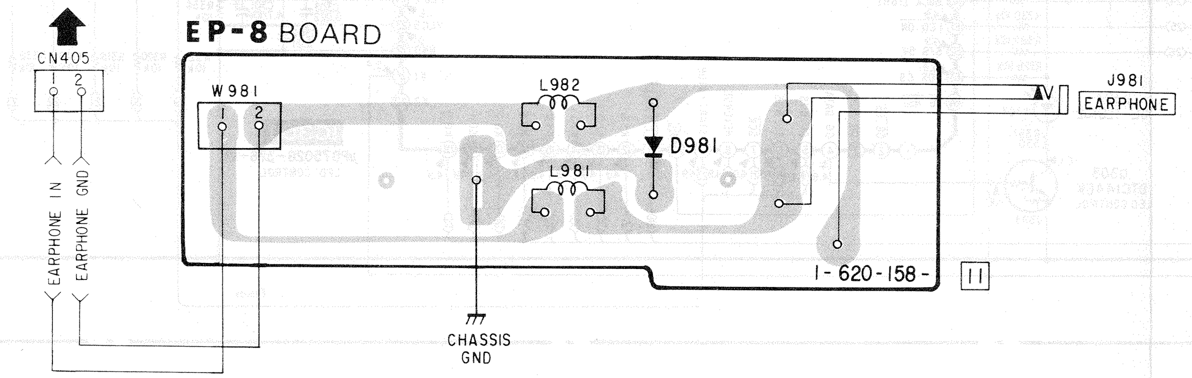
IC401	C-4
Q401	E-1
Q404	B-7
Q405	D-10
Q406	D-2
Q407	D-2
Q408	B-2
Q409	B-11
Q410	D-7
Q411	D-7
Q412	D-7
Q413	A-11
Q414	E-7
RV401	C-5
RV402	C-2
RV403	C-5
TP401	E-2
TP404	A-3
TP406	B-2
TP408	D-1
TP409	B-3
TP410	C-5

AU-25 BOARD (COMPONENT SIDE)

no mark : REC mode
( ) : PB mode


A
B
C
D
E
1
2
3
4
5
6
IC401
Q401
Q406
Q407
Q408
TP401
TP404
TP406
TP408
TP409
TP410
RV401
RV402
RV403
CN403
CN404
CN405
CN406
FL401
L401
L402
W204
W205
C401
C408
C409
C410
C411
C416
C423
C424
C426
C427
C428
C429
C430
C431
C433
C439
C440
C441 100p
C442
C443
C444
C445
C446 100p
C447
C451
C452 0.015
C453
C412 0.01
C414 0.022
C415 180p
C418 180p
C420 0.0027
R404 2.2k
R410 15k
R413 18k
R419
R423 3.3k
R424 3.3k
R425 2.7k
R426 2.2k
R430 22
R432 8.2k
R437 8.2k
R438 6.8k
R439 82
R441 330
R445 47k
1-620-485-

EP-8 BOARD


CN405
EARPHONE IN
EARPHONE GND
W981
L982
L981
D981
J981
EARPHONE
CHASSIS GND
1-620-158-

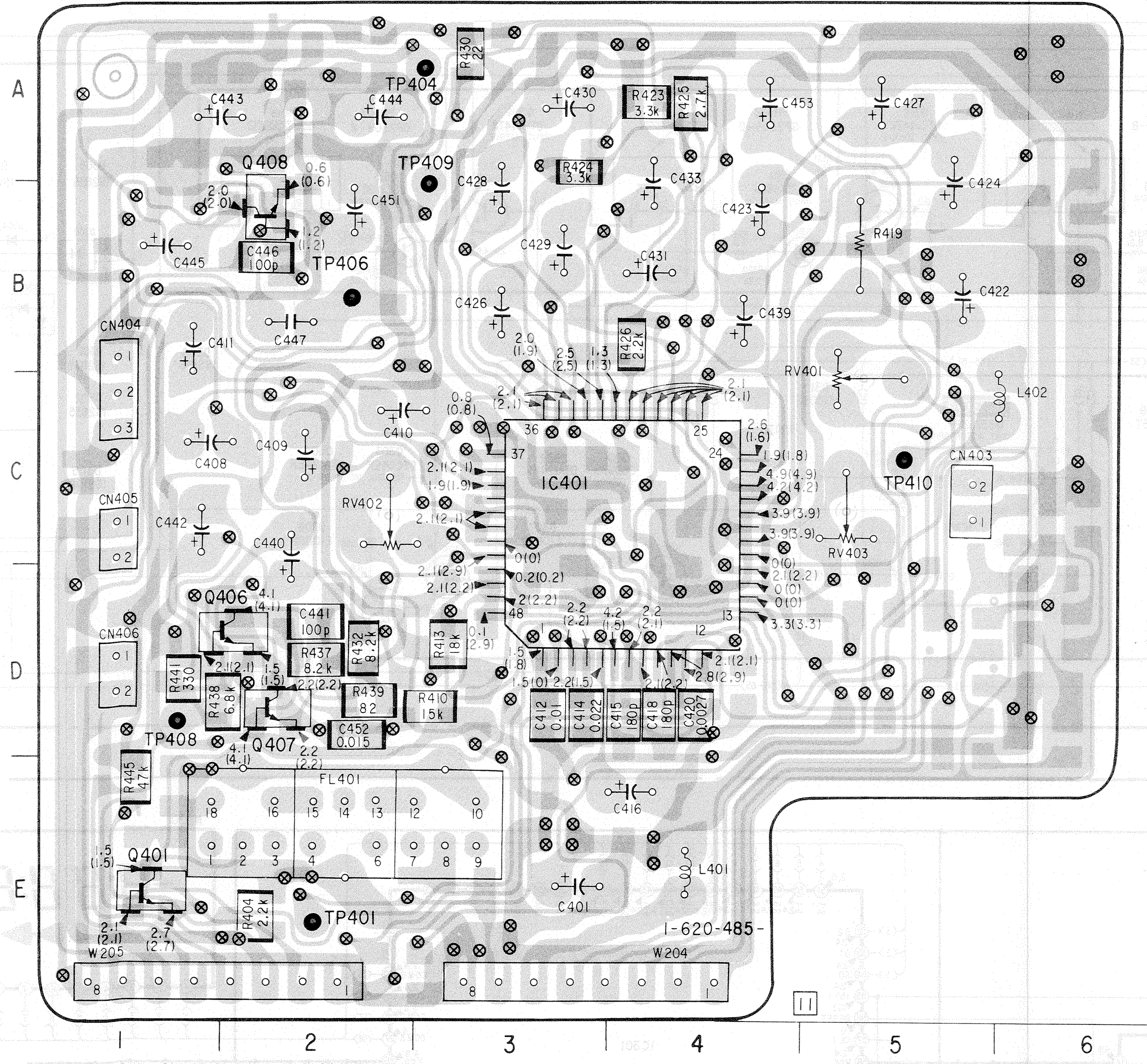
AU-25 (AUDIO SIGNAL PROCESS), EP-8 (EARPHONE JACK) PRINTED WIRING BOARD

– Ref. No. AU-25, EP-8 BOARDS: 8000 series –

IC401	C-4
Q401	E-1
Q404	B-7
Q405	D-10
Q406	D-2
Q407	D-2
Q408	B-2
Q409	B-11
Q410	D-7
Q411	D-7
Q412	D-7
Q413	A-11
Q414	E-7
RV401	C-5
RV402	C-2
RV403	C-5
TP401	E-2
TP404	A-3
TP406	B-2
TP408	D-1
TP409	B-3
TP410	C-5

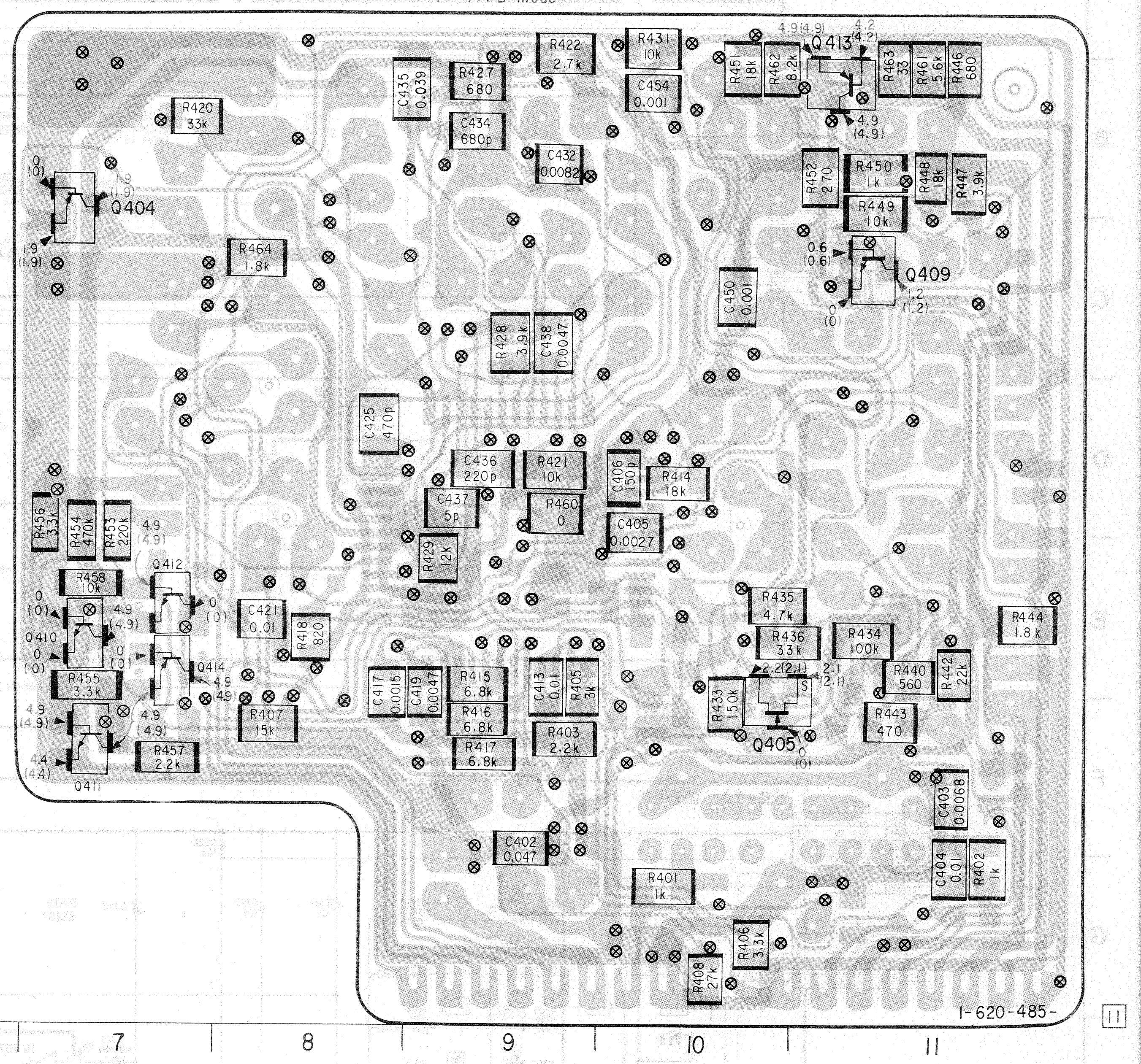
AU-25 BOARD (COMPONENT SIDE)

no mark : REC mode
( ) : PB mode

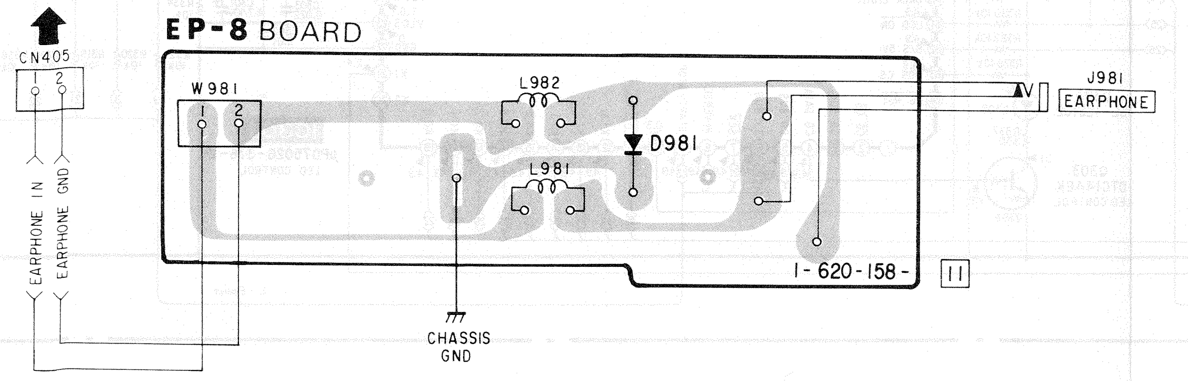

A
B
C
D
E
1
2
3
4
5
IC401
Q401
Q406
Q407
Q408
TP401
TP404
TP406
TP408
TP409
TP410
RV401
RV402
RV403
CN403
CN404
CN405
CN406
FL401
L401
L402
W204
W205
R404 2.2k
R419
R423 3.3k
R424 3.3k
R425 2.7k
R426 2.2k
R430 22
R432 8.2k
R437 8.2k
R438 6.8k
R439 82
R410 15k
R413 18k
R441 330
R445 47k
C401
C408
C409
C410
C411
C412 0.01
C414 0.022
C415 180p
C416
C418 180p
C420 0.0027
C422
C423
C424
C426
C427
C428
C429
C430
C431
C433
C439
C440
C441 100p
C442
C443
C444
C445
C446 100p
C447
C451
C452 0.015
C453
1-620-485-
11

AU-25 BOARD (SOLDER SIDE)

no mark : REC mode
( ) : PB mode

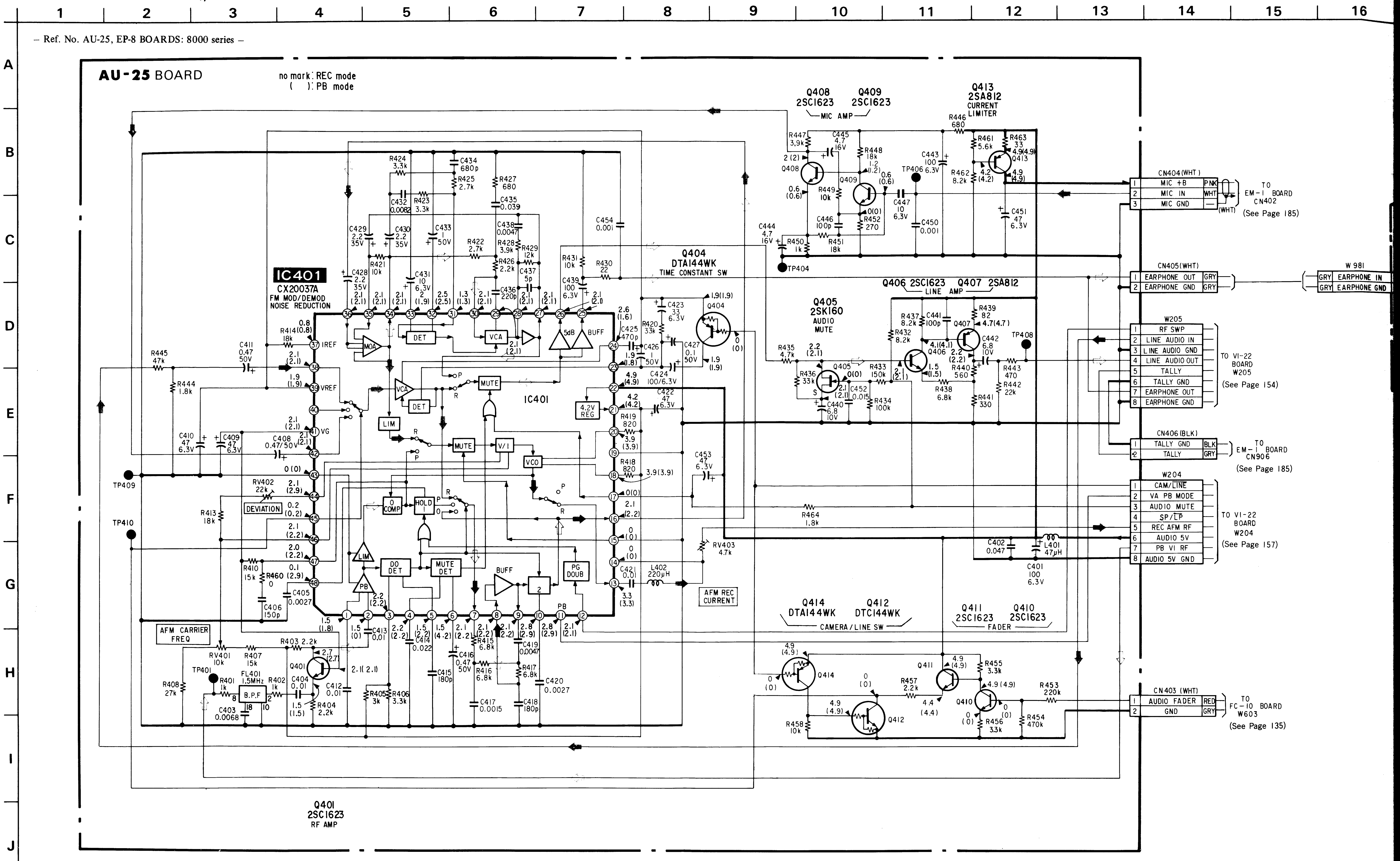

6
7
8
9
10
11
Q404
Q405
Q409
Q410
Q411
Q412
Q413
Q414
R401 1k
R402 1k
R403 2.2k
R405 3k
R406 3.3k
R407 15k
R408 27k
R414 18k
R415 6.8k
R416 6.8k
R417 6.8k
R418 820
R420 33k
R421 10k
R422 2.7k
R427 680
R428 3.9k
R429 12k
R431 10k
R433 150k
R434 100k
R435 4.7k
R436 33k
R440 560
R442 22k
R443 470
R444 1.8k
R446 680
R447 3.9k
R448 1k
R449 10k
R450 1k
R451 18k
R452 270
R453 220k
R454 470k
R455 3.3k
R456 3.3k
R457 2.2k
R458 10k
R460 0
R461 5.6k
R462 8.2k
R463 33
R464 1.8k
C402 0.047
C403 0.0068
C404 0.01
C405 0.0027
C406 150p
C413 0.01
C417 0.0015
C419 0.0047
C421 0.01
C425 470p
C432 0.0082
C434 680p
C435 0.039
C436 220p
C437 5p
C438 0.0047
C450 0.001
C454 0.001
1-620-485-
11

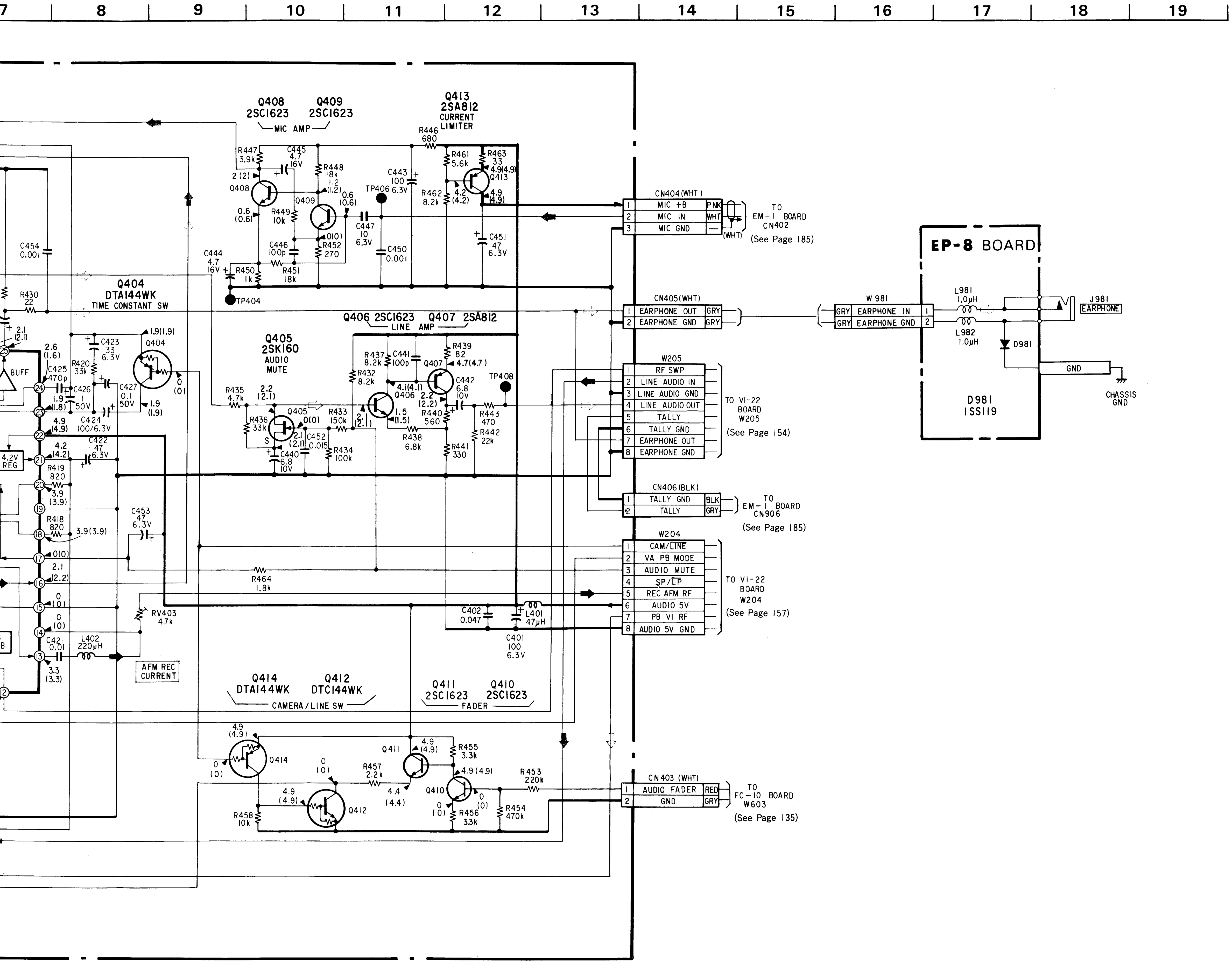
EP-8 BOARD


CN405
1
2
EARPHONE IN
EARPHONE GND
W981
L982
L981
D981
J981
EARPHONE
CHASSIS GND
1-620-158-
11

AU-25 (AUDIO SIGNAL PROCESS), EP-8 (EARPHONE JACK) SCHEMATIC DIAGRAM

– Ref. No. AU-25, EP-8 BOARDS: 8000 series –


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
AU-25 BOARD
no mark: REC mode
( ): PB mode
IC401
CX20037A
FM MOD/DEMOD
NOISE REDUCTION
IREF
VREF
VG
MOA
DET
VCA
5dB
BUFF
LIM
MUTE
V/I
VCO
0 COMP
HOLD
DO DET
MUTE DET
PB
PG DOUB
4.2V REG
DEVIATION
AFM CARRIER FREQ
AFM REC CURRENT
B.P.F
FL401 1.5MHz
Q401 2SC1623 RF AMP
Q404 DTA144WK TIME CONSTANT SW
Q405 2SK160 AUDIO MUTE
Q406 2SC1623 Q407 2SA812 LINE AMP
Q408 2SC1623 Q409 2SC1623 MIC AMP
Q413 2SA812 CURRENT LIMITER
Q414 DTA144WK Q412 DTC144WK CAMERA/LINE SW
Q411 2SC1623 Q410 2SC1623 FADER
TP401 TP404 TP406 TP408 TP409 TP410
CN404 (WHT)
1 MIC +B PNK
2 MIC IN WHT
3 MIC GND
(WHT)
TO EM-1 BOARD CN402 (See Page 185)
CN405 (WHT)
1 EARPHONE OUT GRY
2 EARPHONE GND GRY
W 981
GRY EARPHONE IN
GRY EARPHONE GND
W205
1 RF SWP
2 LINE AUDIO IN
3 LINE AUDIO GND
4 LINE AUDIO OUT
5 TALLY
6 TALLY GND
7 EARPHONE OUT
8 EARPHONE GND
TO VI-22 BOARD W205 (See Page 154)
CN406 (BLK)
1 TALLY GND BLK
2 TALLY GRY
TO EM-1 BOARD CN906 (See Page 185)
W204
1 CAM/LINE
2 VA PB MODE
3 AUDIO MUTE
4 SP/LP
5 REC AFM RF
6 AUDIO 5V
7 PB VI RF
8 AUDIO 5V GND
TO VI-22 BOARD W204 (See Page 157)
CN403 (WHT)
1 AUDIO FADER RED
2 GND GRY
TO FC-10 BOARD W603 (See Page 135)


7
8
9
10
11
12
13
14
15
16
17
18
19
Q408 2SC1623
Q409 2SC1623
MIC AMP
Q413 2SA812 CURRENT LIMITER
Q404 DTA144WK TIME CONSTANT SW
Q406 2SC1623
Q407 2SA812
LINE AMP
Q405 2SK160 AUDIO MUTE
BUFF
4.2V REG
AFM REC CURRENT
RV403 4.7k
Q414 DTA144WK
Q412 DTC144WK
CAMERA / LINE SW
Q411 2SC1623
Q410 2SC1623
FADER
TP404
TP406
TP408
CN404 (WHT)
MIC +B
MIC IN
MIC GND
TO EM-1 BOARD CN402
(See Page 185)
CN405 (WHT)
EARPHONE OUT
EARPHONE GND
W205
RF SWP
LINE AUDIO IN
LINE AUDIO GND
LINE AUDIO OUT
TALLY
TALLY GND
EARPHONE OUT
EARPHONE GND
TO VI-22 BOARD W205
(See Page 154)
CN406 (BLK)
TALLY GND
TALLY
TO EM-1 BOARD CN906
(See Page 185)
W204
CAM/LINE
VA PB MODE
AUDIO MUTE
SP/LP
REC AFM RF
AUDIO 5V
PB VI RF
AUDIO 5V GND
TO VI-22 BOARD W204
(See Page 157)
CN403 (WHT)
AUDIO FADER
GND
TO FC-10 BOARD W603
(See Page 135)
EP-8 BOARD
W981
EARPHONE IN
EARPHONE GND
L981 1.0μH
L982 1.0μH
D981
D981 1SS119
J981
EARPHONE
GND
CHASSIS GND

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

When indicating parts by reference number, please include the board name.

- **Signal path**

➡ :REC AUDIO SIGNAL

⇨ :PB AUDIO SIGNAL

Note (Printed Wiring Board):

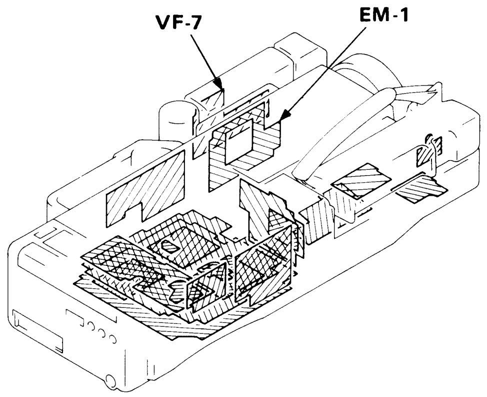
- ⊗ : mark is through hole.
- o— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ░ : pattern of the rear side.
- ▒ : B+ Pattern.
- Digital transistor (EM-1: Q901, 905, 906) transistor with resistors.
  Refer to the EM-1 board schematic diagram for digital transistor.

Note

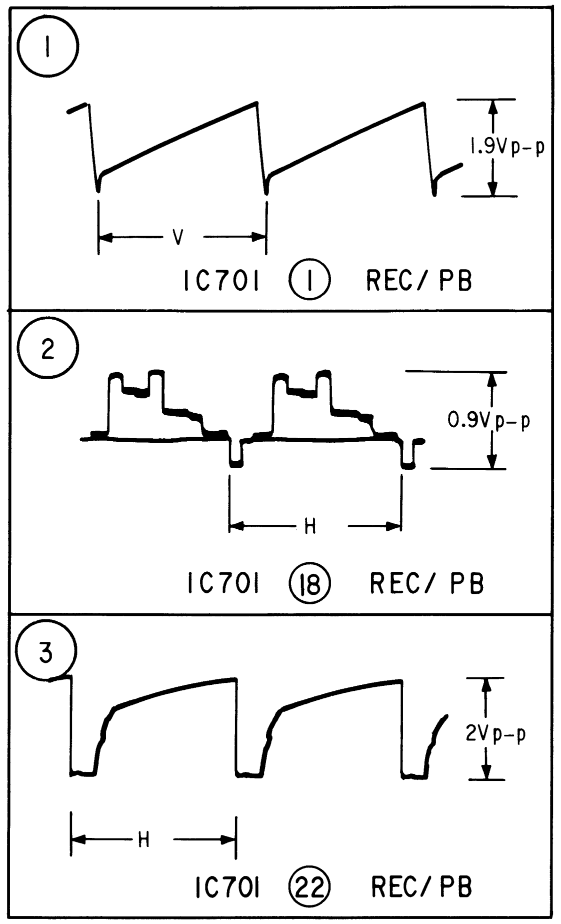
Soldering side:	**Parts on the soldering side being seen from the soldering are stated.**
Component side:	**Parts on the component side being seen from the component are stated.**

Regarding color indication of patterns

- * **Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).**
- * **Pattern being seen in the state of the rear surface side is indicated in green pattern.**



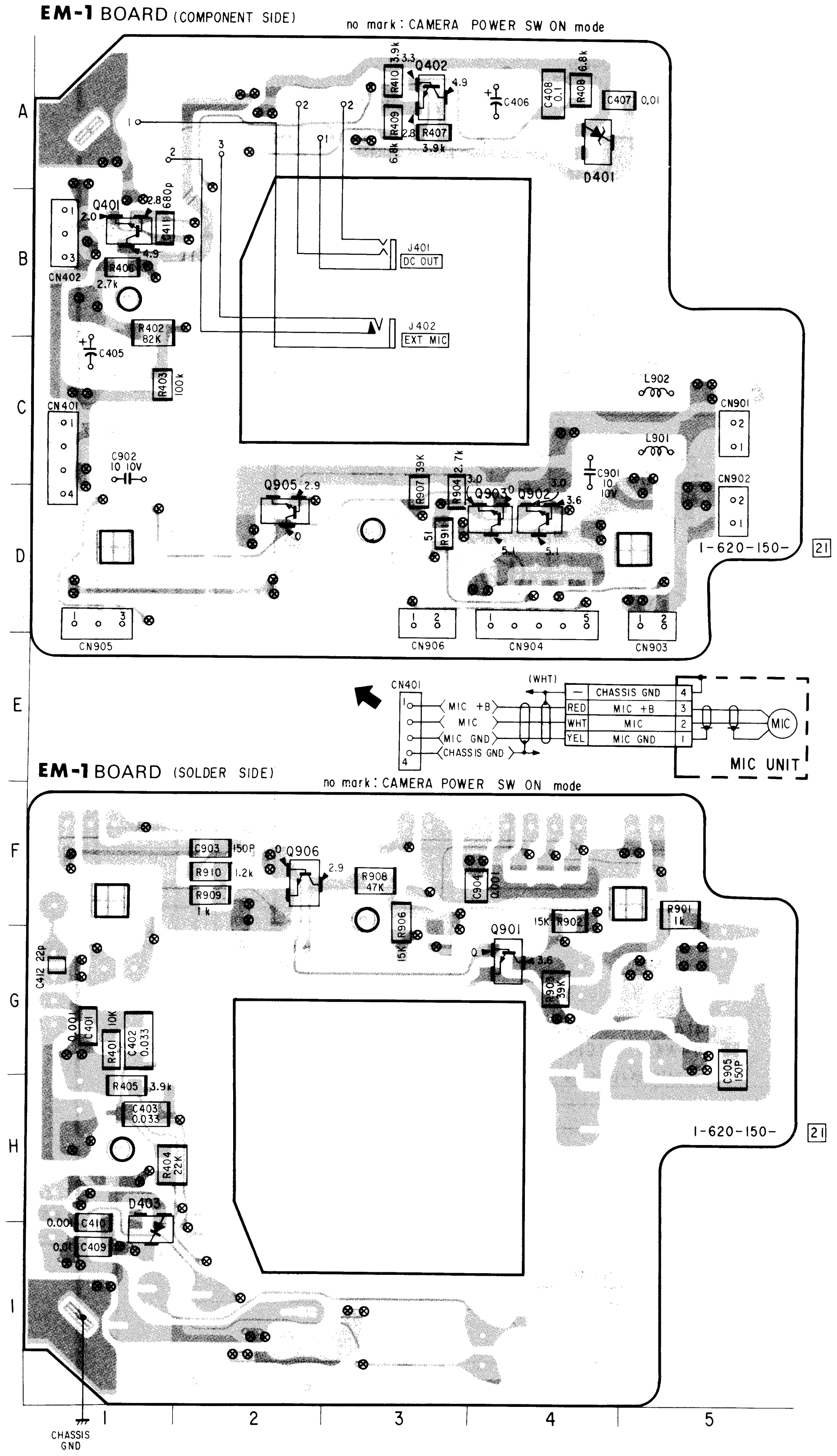
VF-7 BOARD


1
1.9Vp-p
V
IC701 ① REC/PB
2
0.9Vp-p
H
IC701 ⑱ REC/PB
3
2Vp-p
H
IC701 ㉒ REC/PB

VF-7 (VIEW FINDER PROCESS), EM-1 (MIC AMP, VIEW FINDER RELAY) PRINTED WIRING BOARD

– Ref. No. VF-7, EM-1 BOARDS: 9000 series –

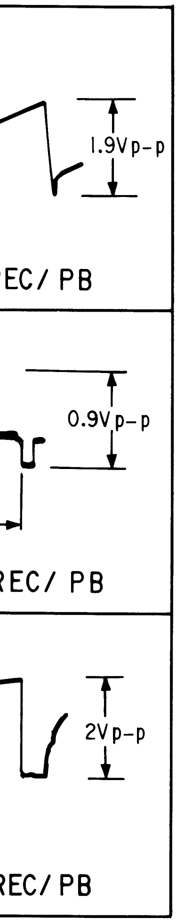
D401	A-4
D403	I-1
Q401	B-1
Q402	A-3
Q901	G-4
Q902	D-4
Q903	D-3
Q905	D-2
Q906	F-2


EM-1 BOARD (COMPONENT SIDE)
no mark: CAMERA POWER SW ON mode
A
B
C
D
E
F
G
H
I
Q402
Q401
Q905
Q903
Q902
D401
CN402
CN401
CN901
CN902
CN905
CN906
CN904
CN903
J401 DC OUT
J402 EXT MIC
L902
L901
C902 10 10V
C901 10 10V
C405
C406
C407 0.01
C408 0.1
R402 82K
R403 100k
R406
R407 3.9k
R408 6.8k
R409 6.8k
R410 3.9k
R907 39K
R904 2.7k
R911 51
1-620-150- 21
CN401
(WHT)
MIC +B
MIC
MIC GND
CHASSIS GND
RED
WHT
YEL
MIC UNIT
MIC
EM-1 BOARD (SOLDER SIDE)
no mark: CAMERA POWER SW ON mode
C903 150P
R910 1.2k
R909 1k
Q906
R908 47K
C904
R906 15K
Q901
R902 15K
R901 1k
R903 39K
C905 150P
C412 22p
C401 0.001
R401 10K
C402 0.033
R405 3.9k
C403 0.033
R404 22K
D403
C410 0.001
C409 0.01
1-620-150- 21
CHASSIS GND
1
2
3
4
5

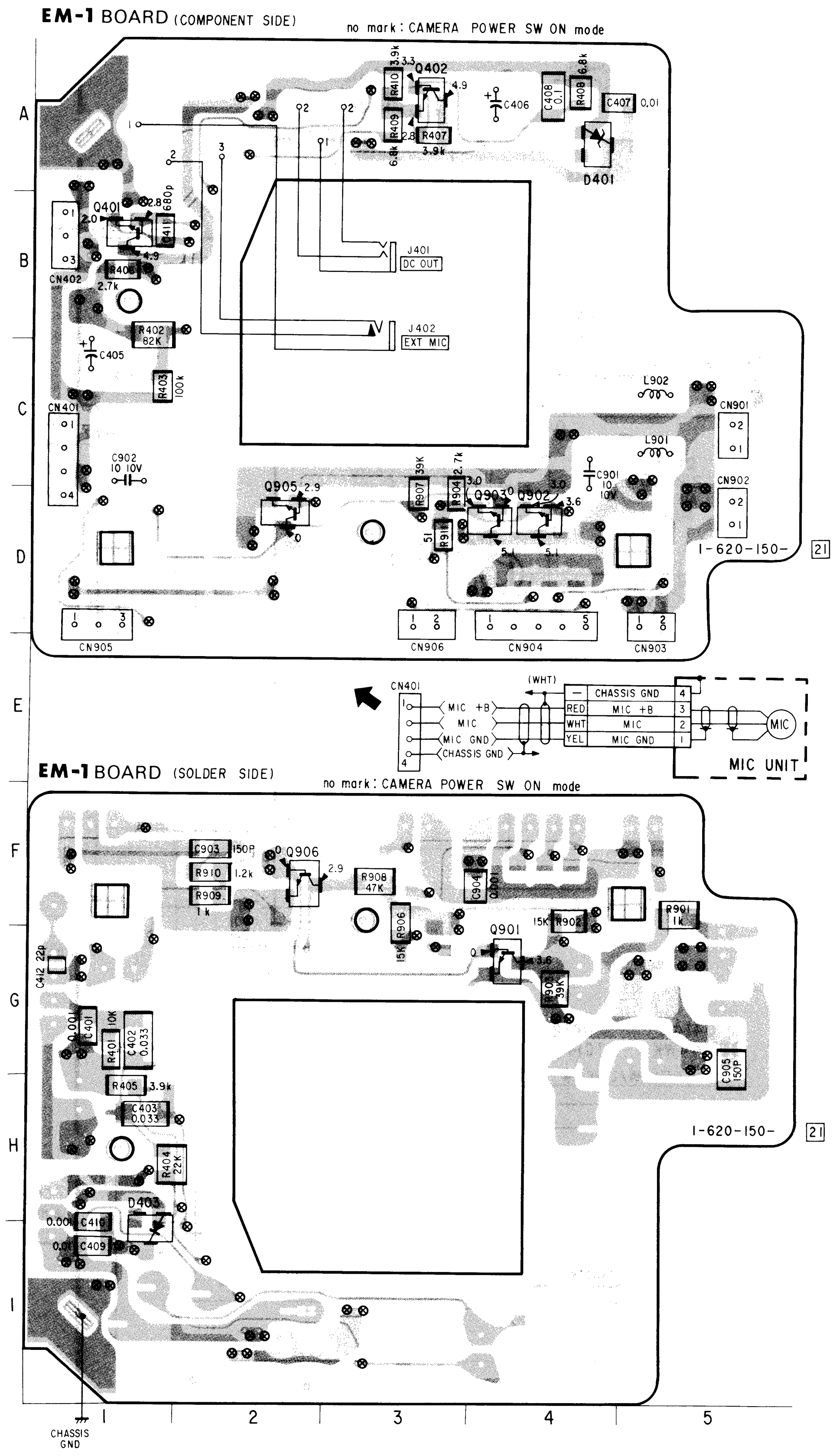
D701	F-4
D702	F-4
D703	F-1
D704	A-2
IC701	G-2
Q701	G-2
Q702	E-1
Q703	F-5
Q704	F-5
RV701	A-1
RV702	C-3
RV703	C-2
RV704	D-6
RV705	C-6

VF-7 (VIEW FINDER PROCESS), EM-1 (MIC AMP, VIEW FINDER RELAY) PRINTED WIRING BOARD

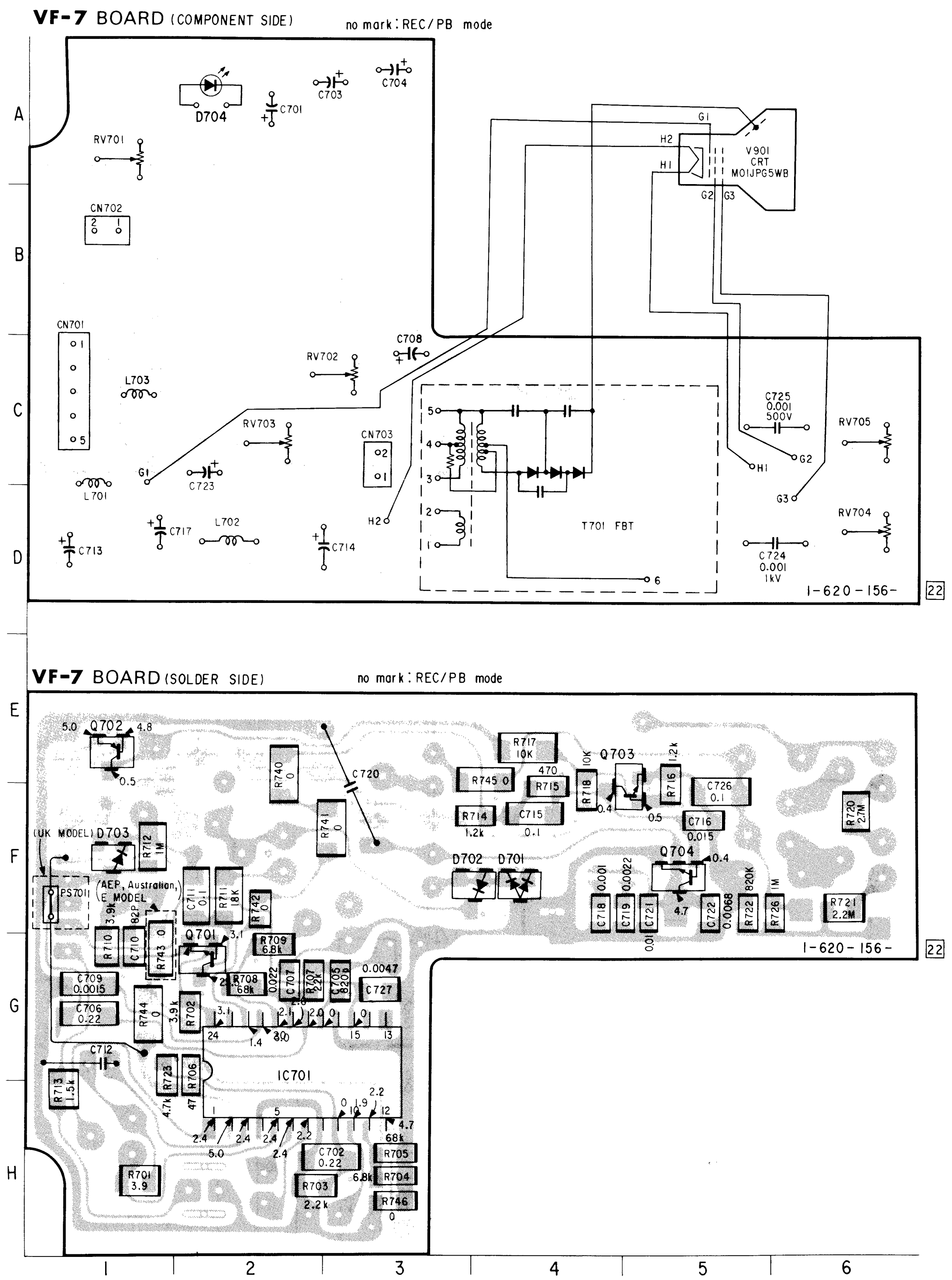
– Ref. No. VF-7, EM-1 BOARDS: 9000 series –



D401	A-4
D403	I-1
Q401	B-1
Q402	A-3
Q901	G-4
Q902	D-4
Q903	D-3
Q905	D-2
Q906	F-2

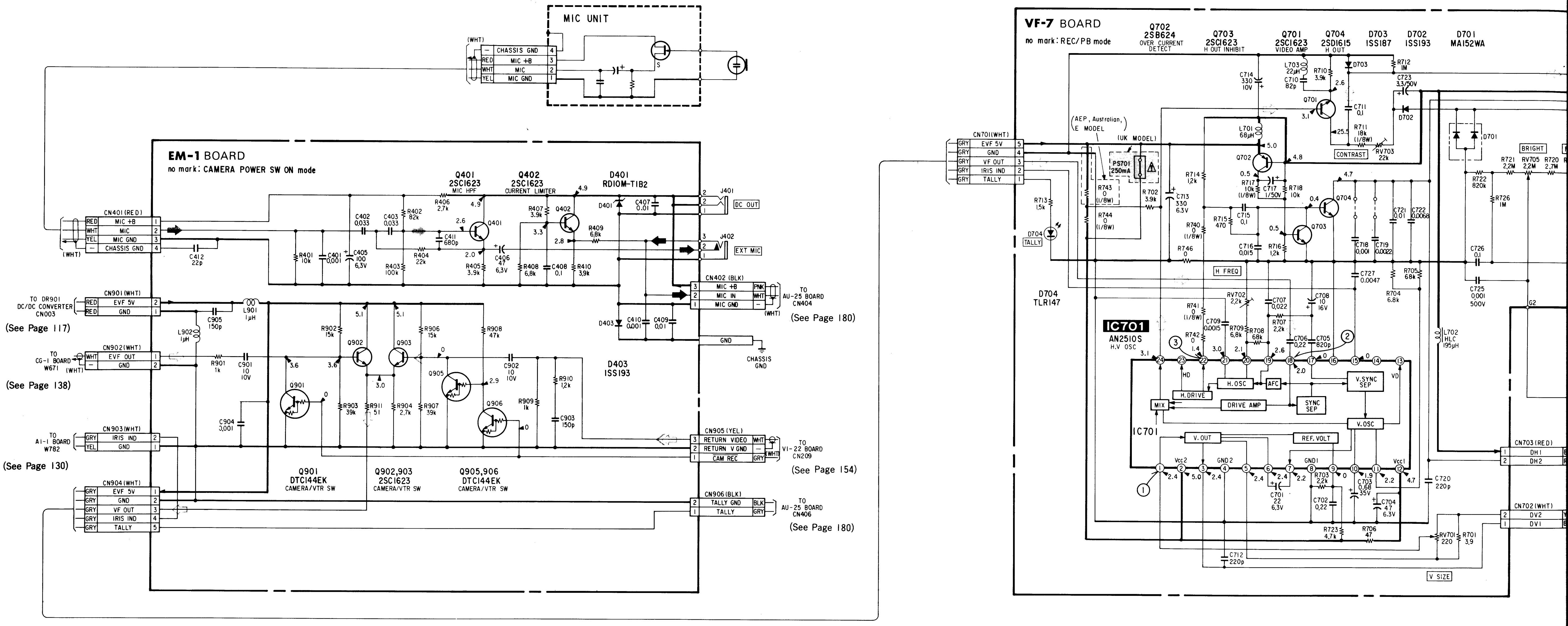

EM-1 BOARD (COMPONENT SIDE)
no mark: CAMERA POWER SW ON mode
Q402
D401
Q401
CN402
J401 DC OUT
J402 EXT MIC
CN401
CN901
CN902
L901
L902
Q905
Q903
Q902
CN905
CN906
CN904
CN903
1-620-150-
21
CN401
(WHT)
MIC +B
MIC
MIC GND
CHASSIS GND
RED
WHT
YEL
MIC UNIT
EM-1 BOARD (SOLDER SIDE)
no mark: CAMERA POWER SW ON mode
Q906
Q901
D403
1-620-150-
21
CHASSIS GND
A
B
C
D
E
F
G
H
I
1
2
3
4
5

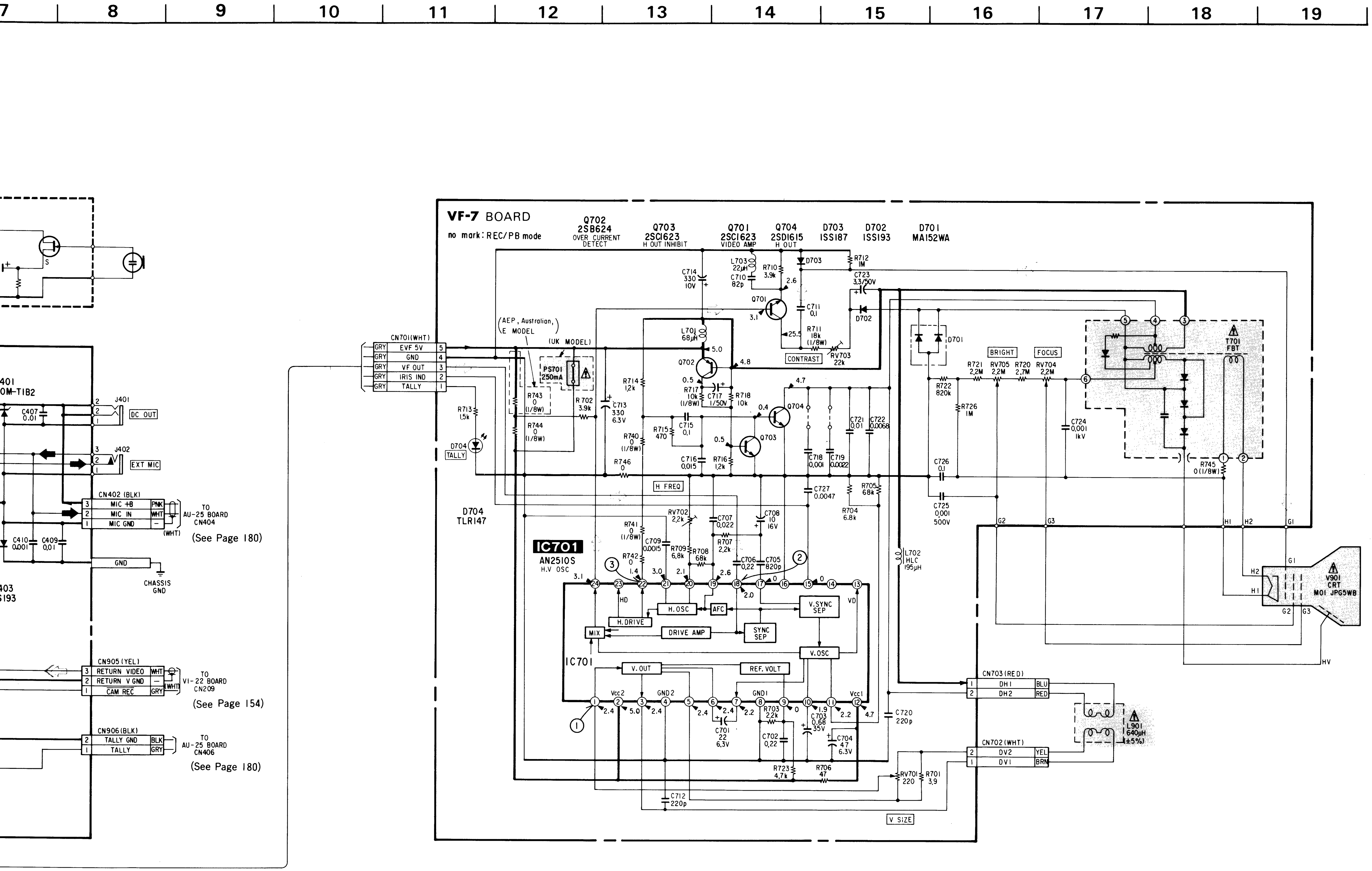
D701	F-4
D702	F-4
D703	F-1
D704	A-2
IC701	G-2
Q701	G-2
Q702	E-1
Q703	F-5
Q704	F-5
RV701	A-1
RV702	C-3
RV703	C-2
RV704	D-6
RV705	C-6


VF-7 BOARD (COMPONENT SIDE)
no mark: REC/PB mode
D704
RV701
CN702
CN701
V901 CRT M01JPG5WB
RV702
RV703
CN703
T701 FBT
C725 0.001 500V
C724 0.001 1kV
RV705
RV704
1-620-156-
22
VF-7 BOARD (SOLDER SIDE)
no mark: REC/PB mode
Q702
Q703
Q704
D703
D702
D701
(UK MODEL)
PS701
(AEP, Australian, E MODEL)
Q701
IC701
1-620-156-
22
A
B
C
D
E
F
G
H
1
2
3
4
5
6

VF-7 (VIEW FINDER PROCESS), EM-1 (MIC AMP, VIEW FINDER RELAY) SCHEMATIC DIAGRAM

– Ref. No. VF-7, EM-1 BOARDS: 9000 series –


MIC UNIT
EM-1 BOARD
no mark: CAMERA POWER SW ON mode
Q401 2SC1623 MIC HPF
Q402 2SC1623 CURRENT LIMITER
D401 RD10M-T1B2
D403 1SS193
Q901 DTC144EK CAMERA/VTR SW
Q902,903 2SC1623 CAMERA/VTR SW
Q905,906 DTC144EK CAMERA/VTR SW
CN401 (RED)
CN901 (WHT)
CN902 (WHT)
CN903 (WHT)
CN904 (WHT)
CN402 (BLK)
CN905 (YEL)
CN906 (BLK)
J401 DC OUT
J402 EXT MIC
TO DR901 DC/DC CONVERTER CN003
(See Page 117)
TO CG-1 BOARD W671
(See Page 138)
TO AI-1 BOARD W782
(See Page 130)
TO AU-25 BOARD CN404
(See Page 180)
TO VI-22 BOARD CN209
(See Page 154)
TO AU-25 BOARD CN406
(See Page 180)
CHASSIS GND
VF-7 BOARD
no mark: REC/PB mode
Q702 2SB624 OVER CURRENT DETECT
Q703 2SC1623 H OUT INHIBIT
Q701 2SC1623 VIDEO AMP
Q704 2SD1615 H OUT
D703 1SS187
D702 1SS193
D701 MA152WA
CN701 (WHT)
(AEP, Australian, E MODEL)
(UK MODEL)
PS701 250mA
D704 TALLY
D704 TLR147
CONTRAST
BRIGHT
H FREQ
V SIZE
IC701 AN2510S H.V OSC
H.OSC
AFC
H.DRIVE
DRIVE AMP
MIX
SYNC SEP
V.SYNC SEP
V.OSC
V.OUT
REF.VOLT
L702 HLC 195μH
CN703 (RED)
CN702 (WHT)


7
8
9
10
11
12
13
14
15
16
17
18
19
VF-7 BOARD
no mark: REC/PB mode
Q702 2SB624 OVER CURRENT DETECT
Q703 2SC1623 H OUT INHIBIT
Q701 2SC1623 VIDEO AMP
Q704 2SD1615 H OUT
D703 1SS187
D702 1SS193
D701 MA152WA
CN701(WHT)
EVF 5V
GND
VF OUT
IRIS IND
TALLY
(AEP, Australian, E MODEL)
(UK MODEL)
PS701 250mA
CONTRAST
BRIGHT
FOCUS
T701 FBT
H FREQ
IC701 AN2510S H.V OSC
H.OSC
AFC
H.DRIVE
DRIVE AMP
SYNC SEP
V.SYNC SEP
V.OSC
MIX
V.OUT
REF.VOLT
V SIZE
D704 TLR147
V901 CRT M01 JPG5WB
CN703(RED)
DH1
DH2
CN702(WHT)
DV2
DV1
L901 640μH (±5%)
J401 DC OUT
J402 EXT MIC
CN402 (BLK)
MIC +B
MIC IN
MIC GND
TO AU-25 BOARD CN404
(See Page 180)
CHASSIS GND
CN905 (YEL)
RETURN VIDEO
RETURN V GND
CAM REC
TO VI-22 BOARD CN209
(See Page 154)
CN906 (BLK)
TALLY GND
TALLY
TO AU-25 BOARD CN406
(See Page 180)

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance. kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

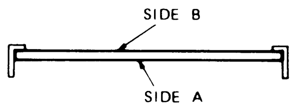
When indicating parts by reference number, please include the board name.

- **Signal path**
  - :PB Y SIGNAL
  - ⇨ :PB Y & CHROMA SIGNAL
  - ➡ REC AUDIO SIGNAL

DT-61 (TIMING GENERATOR, REGISTER DRIVE) PRINTED WIRING BO

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▩ : pattern from the side which enables seeing.
- ░ : pattern of the rear side.
- ▒ : B+ pattern.
- ▨ : printing resistance.

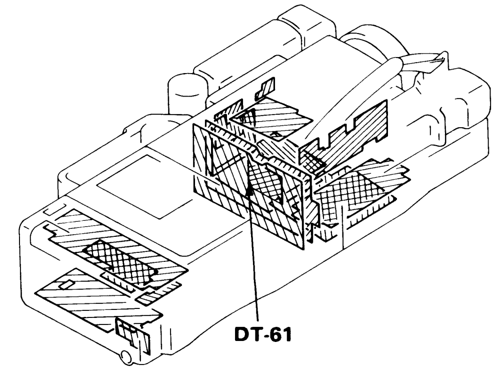

SIDE B
SIDE A

Note

Soldering side: (SIDE A)	Parts on the soldering side being seen from the soldering are stated.
Component side: (SIDE B)	Parts on the component side being seen from the component are stated.

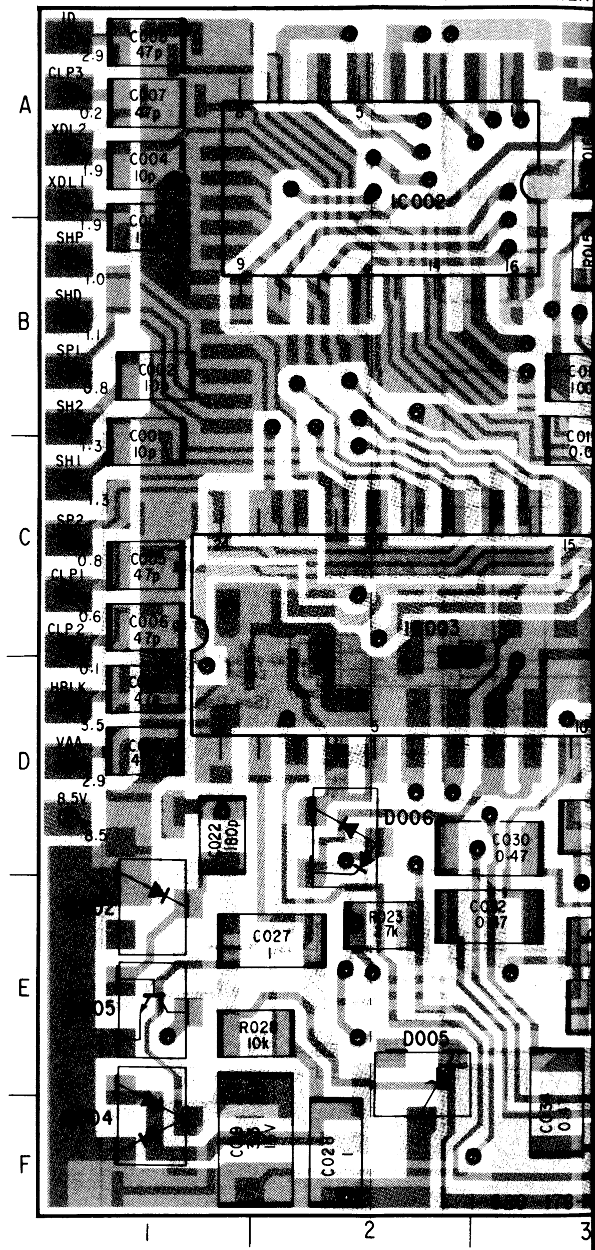
Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.



D001	E-8
D002	E-1
D003	E-6
D004	F-1
D005	E-2
D006	D-2
D007	E-8
D008	E-6
D009	F-6
D010	D-6
IC001	B-7
IC002	A-2
IC003	C-2
IC004	D-7
Q001	A-3
Q002	D-8
Q003	D-8
Q004	E-8
Q005	E-1
Q006	F-8

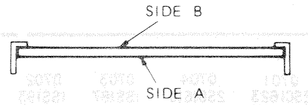
DT-61 BOARD (SIDE B) no mark: CAMERA POWER


A
B
C
D
E
F
1
2
3
CLP3
XDL2
XDL1
SHP
SHD
SP1
SH2
SH1
SP2
CLP1
CLP2
HBLK
VAA
8.5V
IC002
IC003
D006
D005
C027
C022 180p
C030 0.47
R023 4.7k
R020 10k
C028

DT-61 (TIMING GENERATOR, REGISTER DRIVE) PRINTED WIRING BOARD

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▒ : pattern from the side which enables seeing.
- ▒ : pattern of the rear side.
- ▒ : B+ pattern.
- ▨ : printing resistance.


SIDE B
SIDE A

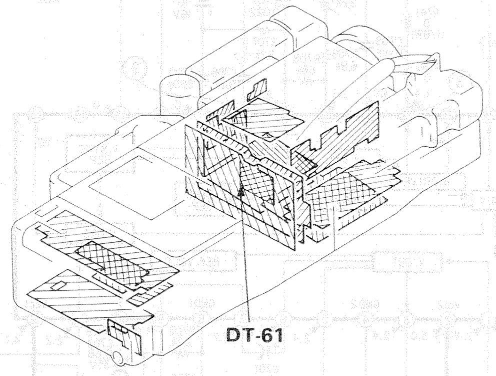
Note

Soldering side: (SIDE A) Parts on the soldering side being seen from the soldering are stated.

Component side: (SIDE B) Parts on the component side being seen from the component are stated.

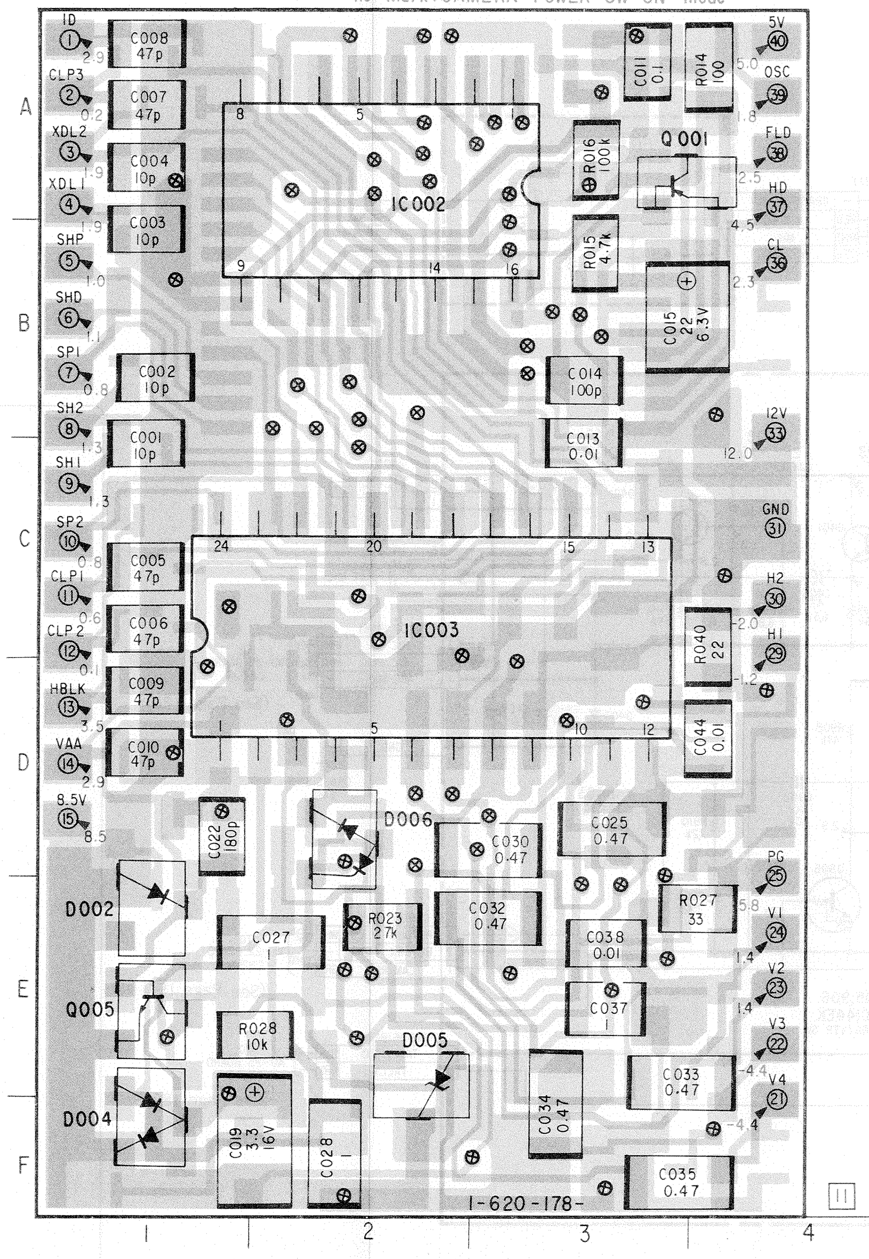
Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.

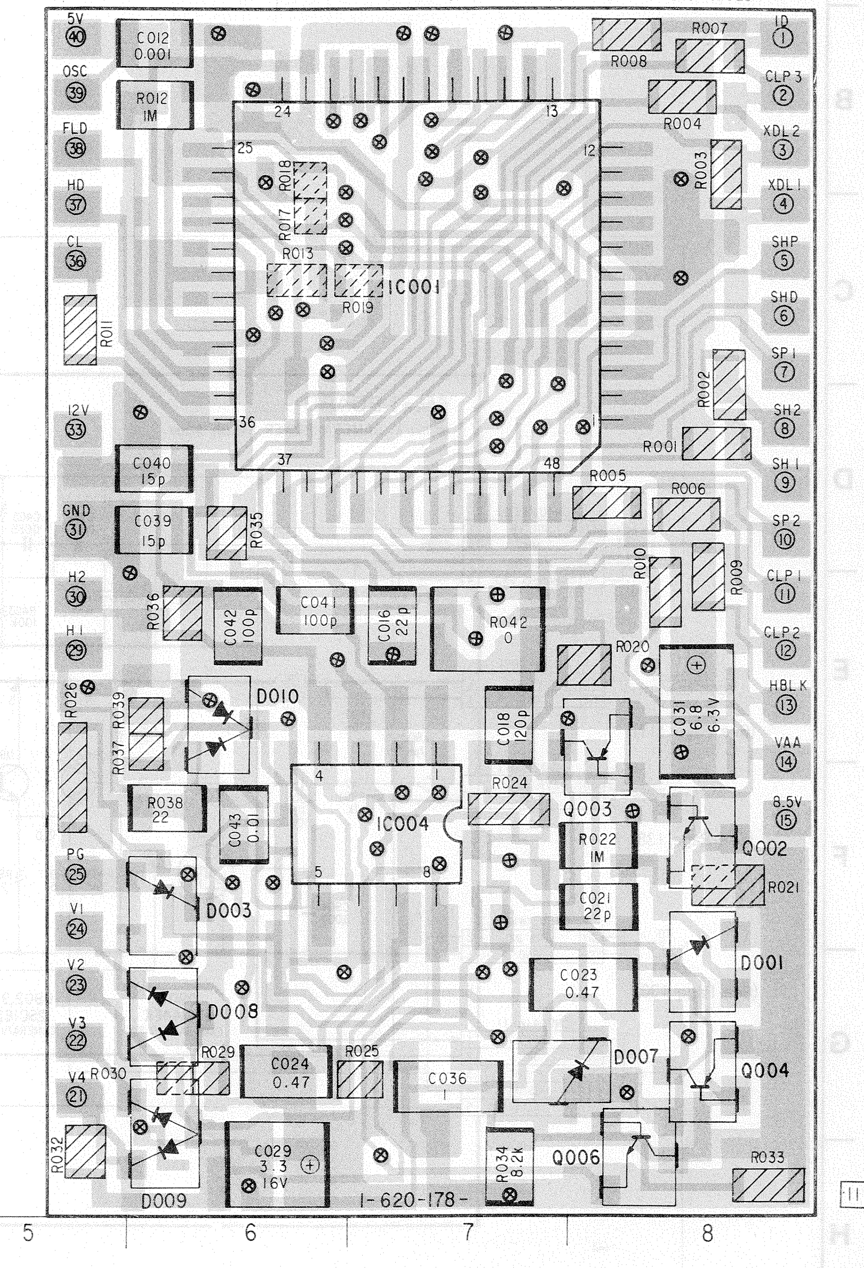


D001	E - 8
D002	E - 1
D003	E - 6
D004	F - 1
D005	E - 2
D006	D - 2
D007	E - 8
D008	E - 6
D009	F - 6
D010	D - 6
IC001	B - 7
IC002	A - 2
IC003	C - 2
IC004	D - 7
Q001	A - 3
Q002	D - 8
Q003	D - 8
Q004	E - 8
Q005	E - 1
Q006	F - 8

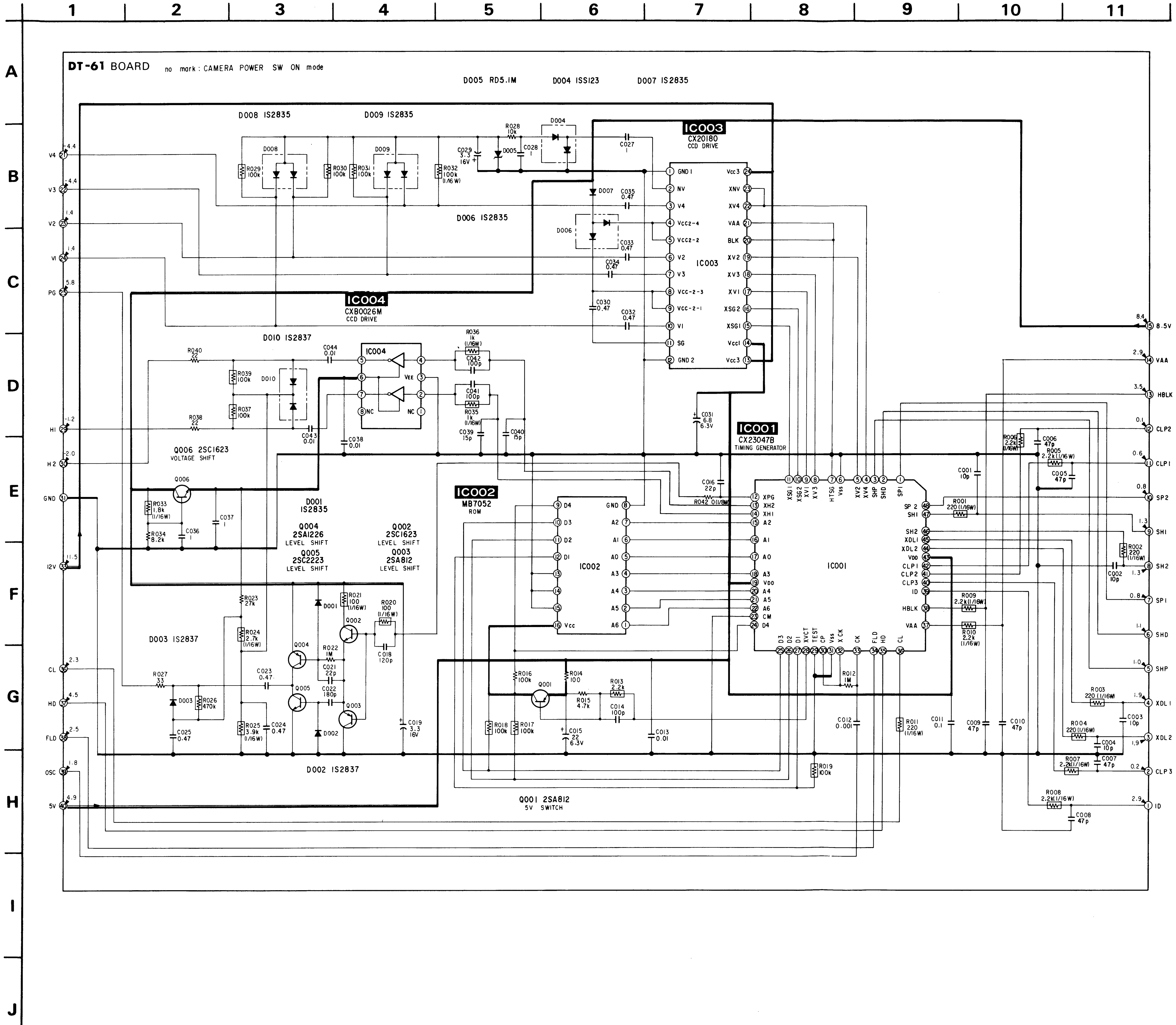
DT-61 BOARD (SIDE B) no mark: CAMERA POWER SW ON mode


A
B
C
D
E
F
1
2
3
4
ID
CLP3
XDL2
XDL1
SHP
SHD
SP1
SH2
SH1
SP2
CLP1
CLP2
HBLK
VAA
8.5V
5V
OSC
FLD
HD
CL
12V
GND
H2
H1
PG
V1
V2
V3
V4
C008 47p
C007 47p
C004 10p
C003 10p
C002 10p
C001 10p
C005 47p
C006 47p
C009 47p
C010 47p
C011 0.1
R014 100
R016 100k
R015 4.7k
Q001
IC002
C015 22 6.3V
C014 100p
C013 0.01
IC003
R040 22
C044 0.01
C022 180p
D006
C030 0.47
C025 0.47
R027 33
D002
C027 1
R023 2.7k
C032 0.47
C038 0.01
C037 1
Q005
R028 10k
D005
D004
C019 3.3 16V
C028 1
C034 0.47
C033 0.47
C035 0.47
1-620-178-

DT-61 BOARD (SIDE A) no mark: CAMERA POWER SW ON mode


5
6
7
8
5V
OSC
FLD
HD
CL
12V
GND
H2
H1
PG
V1
V2
V3
V4
ID
CLP3
XDL2
XDL1
SHP
SHD
SP1
SH2
SH1
SP2
CLP1
CLP2
HBLK
VAA
8.5V
C012 0.001
R012 1M
R007
R008
R004
R003
IC001
R017
R018
R013
R019
R011
R002
R001
R005
R006
C040 15p
C039 15p
R035
R010
R009
R036
C042 100p
C041 100p
C016 22p
R042 0
R020
C031 6.8 6.3V
R026
R039
R037
D010
C018 120p
R038 22
C043 0.01
IC004
R024
Q003
R022 1M
Q002
R021
D003
C021 22p
D001
D008
C023 0.47
R030
R029
C024 0.47
R025
C036 1
D007
Q004
R032
C029 3.3 16V
R034 8.2k
Q006
R033
D009
1-620-178-

DT-61 (TIMING GENERATOR, REGISTER DRIVE) SCHEMATIC DIAGRAM


1
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7
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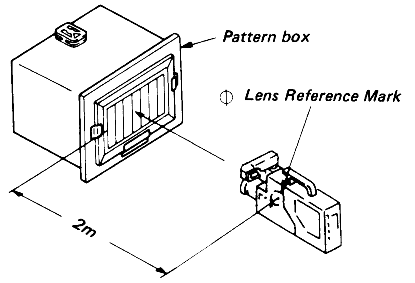
9
10
11
A
B
C
D
E
F
G
H
I
J
DT-61 BOARD
no mark : CAMERA POWER SW ON mode
D005 RD5.1M
D004 1SS123
D007 1S2835
D008 1S2835
D009 1S2835
D006 1S2835
D010 1S2837
IC003
CX20180
CCD DRIVE
IC004
CXB0026M
CCD DRIVE
IC001
CX23047B
TIMING GENERATOR
IC002
MB7052
ROM
Q006 2SC1623
VOLTAGE SHIFT
D001
1S2835
Q004
2SA1226
LEVEL SHIFT
Q005
2SC2223
LEVEL SHIFT
Q002
2SC1623
LEVEL SHIFT
Q003
2SA812
LEVEL SHIFT
D003 1S2837
D002 1S2837
Q001 2SA812
5V SWITCH
V4
V3
V2
V1
PG
H1
H2
GND
12V
CL
HD
FLD
OSC
5V
8.5V
VAA
HBLK
CLP2
CLP1
SP2
SH1
SH2
SP1
SHD
SHP
XDL1
XDL2
CLP3
ID
GND 1
NV
V4
VCC2-4
VCC2-2
V2
V3
VCC-2-3
VCC-2-1
V1
SG
GND 2
Vcc3
XNV
XV4
VAA
BLK
XV2
XV3
XV1
XSG2
XSG1
Vcc1
Vcc3
D4
D3
D2
D1
Vcc
GND
A2
A1
A0
A3
A4
A5
A6
XPG
XH2
XH1
A2
A1
A0
A3
VDD
A4
A5
A6
CM
D4
SP2
SH1
SH2
XDL1
XDL2
VDD
CLP1
CLP2
CLP3
ID
HBLK
VAA
XSG1
XSG2
XV1
XV3
HTSG
Vss
XV2
XV4
SHP
SHD
SP1
D3
D2
D1
XVCT
TEST
CP
Vss
X CK
CK
FLD
HD
CL
R028 10k
R029 100k
R030 100k
R031 100k
R032 100k (1/16W)
C029 3.3 16V
C028 1
C027 1
C035 0.47
C033 0.47
C034 0.47
C030 0.47
C032 0.47
R040 22
R039 100k
R037 100k
R038 22
C044 0.01
C043 0.01
C038 0.01
R036 1k (1/16W)
C042 100p
C041 100p
R035 1k (1/16W)
C039 15p
C040 15p
C031 6.8 6.3V
C016 22p
R042 0(1/8W)
R033 1.8k (1/16W)
R034 8.2k
C036 1
C037 1
R023 27k
R024 2.7k (1/16W)
R021 100 (1/16W)
R020 100 (1/16W)
C018 120p
R022 1M
C021 22p
C022 180p
R027 33
R026 470k
C023 0.47
C025 0.47
R025 3.9k (1/16W)
C024 0.47
C019 3.3 16V
R016 100k
R014 100
R013 2.2k
R015 4.7k
C014 100p
R018 100k
R017 100k
C015 22 6.3V
C013 0.01
C012 0.001
R011 220 (1/16W)
C011 0.1
C009 47p
C010 47p
R012 1M
R019 100k
R001 220 (1/16W)
C001 10p
R006 2.2k (1/16W)
C006 47p
R005 2.2k (1/16W)
C005 47p
R002 220 (1/16W)
C002 10p
R009 2.2k (1/16W)
R010 2.2k (1/16W)
R003 220 (1/16W)
C003 10p
R004 220 (1/16W)
C004 10p
R007 2.2k (1/16W)
C007 47p
R008 2.2k (1/16W)
C008 47p
4.4
4.4
1.4
1.4
5.8
-1.2
-2.0
11.5
2.3
4.5
2.5
1.8
4.9
8.4
2.9
3.5
0.1
0.6
0.8
1.3
1.3
0.8
1.1
1.0
1.9
1.9
0.2
2.9

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat. .
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance; 1/32W in printing resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ⊣▭⊢ : printing resistor.
- ▭ : panel designation.
- ▬ : B+ line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) The voltage value is a reference value between the grounding.
  (The tester used is the digital multimeter DC10MΩ)

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

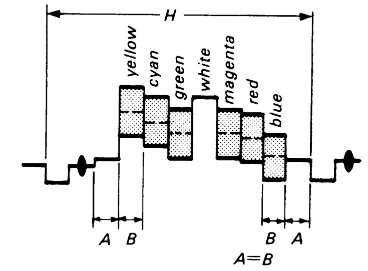

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A=B

Fig. a Camera output waveform of Pin② of CN201 on VI-22 board

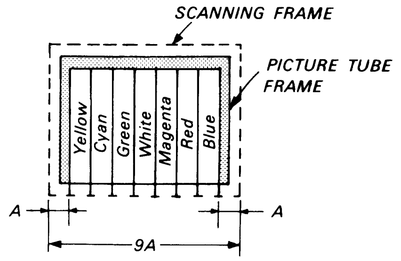

SCANNING FRAME
PICTURE TUBE FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

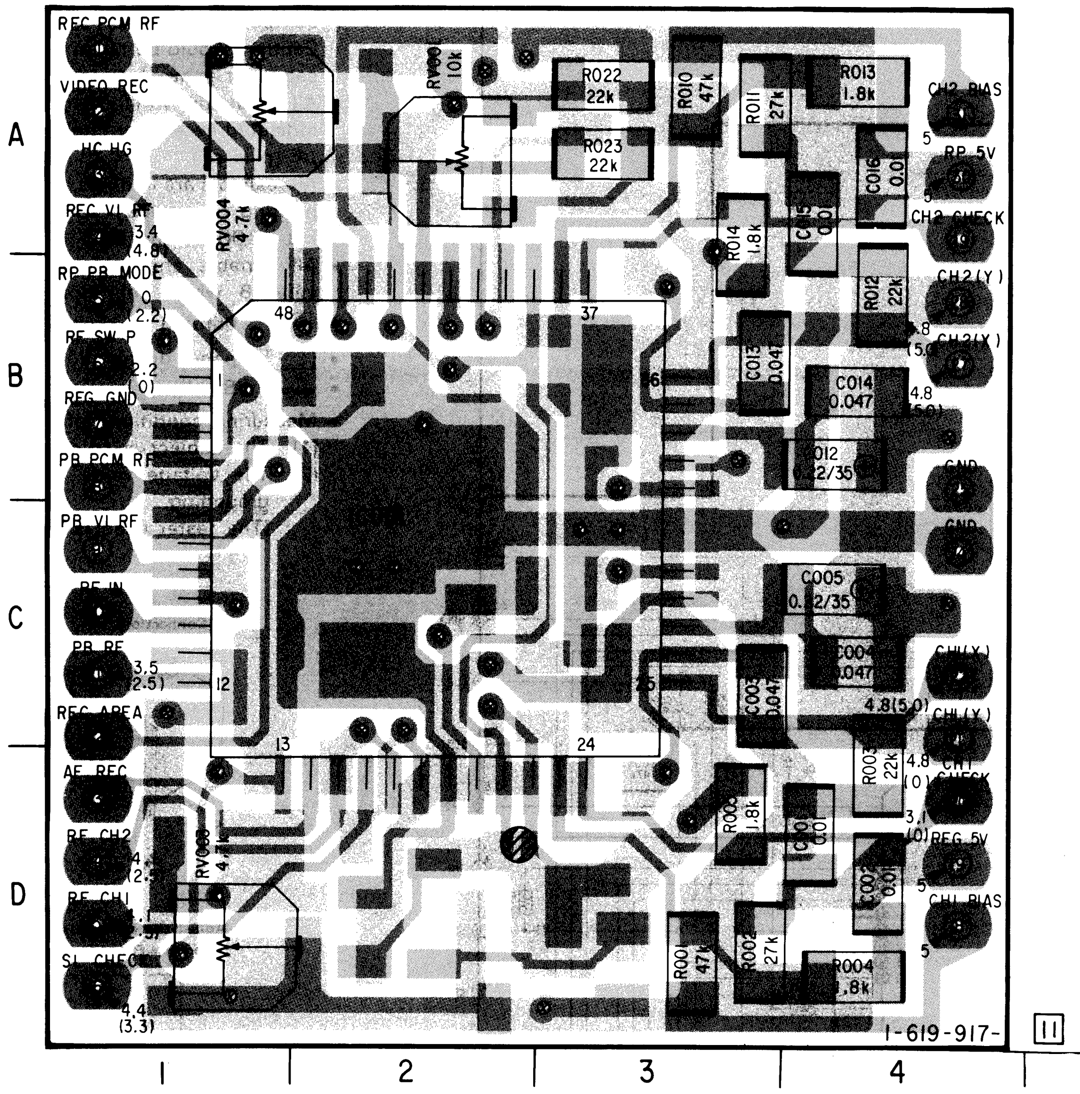
Fig. b Picture of TV monitor screen

RP-34 (VIDEO, AUDIO RF SIGNAL REC/PB) PRINTED WIRING BOARD

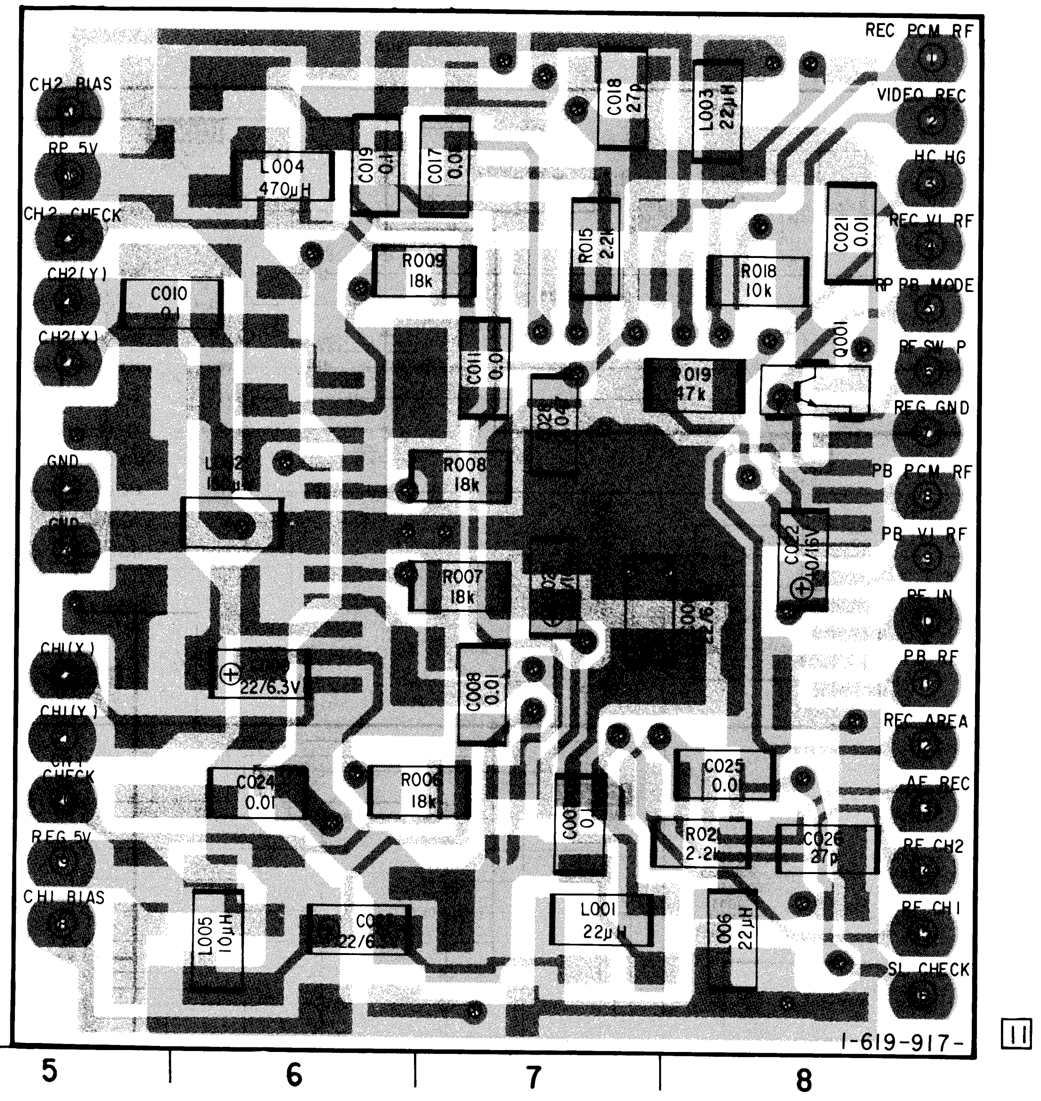
RP-34 BOARD (SIDE B)

no mark : REC mode
( ) : PB mode

IC001	C-2
Q001	B-8
RV001	A-2
RV003	D-1
RV004	A-1

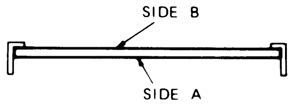

A
B
C
D
1
2
3
4
REC PCM RF
VIDEO REC
HC HG
REC VI RF
RP PB MODE
RF SW P
REG GND
PB PCM RF
PB VI RF
RF IN
PB RF
REC AREA
AF REC
RF CH2
RF CH1
SL CHECK
CH2 BIAS
RP 5V
CH2 CHECK
CH2(Y)
CH2(X)
GND
GND
CH1(X)
CH1(Y)
CH1 CHECK
REG 5V
CH1 BIAS
RV001 10k
R022 22k
R023 22k
R010 47k
R011 27k
R013 1.8k
R014 1.8k
C015 0.01
C016
R012 22k
RV004 4.7k
C013 0.047
C014 0.047
C012 22/35V
C005 0.22/35V
C003 0.047
C004 0.047
R003 22k
R005 1.8k
C001
C002 0.01
RV003 4.7k
R001 47k
R002 27k
R004 1.8k
48
37
1
12
13
24
25
3.4
(4.8)
0
(2.2)
2.2
(0)
3.5
(2.5)
4.8(5.0)
4.8
(0)
3.1
(0)
5
4.4
(3.3)
1-619-917-
11

RP-34 BOARD (SIDE A)


5
6
7
8
REC PCM RF
VIDEO REC
HC HG
REC VI RF
RP PB MODE
RF SW P
REG GND
PB PCM RF
PB VI RF
RF IN
PB RF
REC AREA
AF REC
RF CH2
RF CH1
SL CHECK
CH2 BIAS
RP 5V
CH2 CHECK
CH2(Y)
CH2(X)
GND
GND
CH1(X)
CH1(Y)
CH1 CHECK
REG 5V
CH1 BIAS
L004 470µH
C019 0.1
C017 0.01
C018 27p
L003 22µH
R015 2.2k
R009 18k
R018 10k
C021 0.01
C010 0.1
C011 0.01
Q001
R019 47k
R008 18k
L002 10µH
R007 18k
C022 10/16V
22/6.3V
C008 0.01
C024 0.01
R006 18k
C007 0.1
C025 0.01
R021 2.2k
C026 27p
L005 10µH
C006 22/6.3V
L001 22µH
L006 22µH
1-619-917-
11

Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ░ : pattern of the rear side.
- ░ : B+ pattern.
- Digital transistor (RP-34: Q001) transistor with resistors.
  Refer to the RP-39 board schematic diagram for digital transistor.

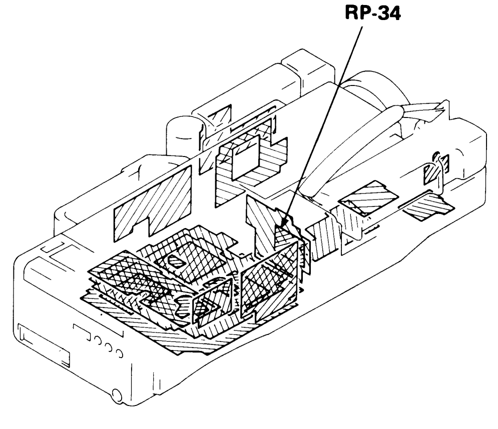

SIDE B
SIDE A

Note

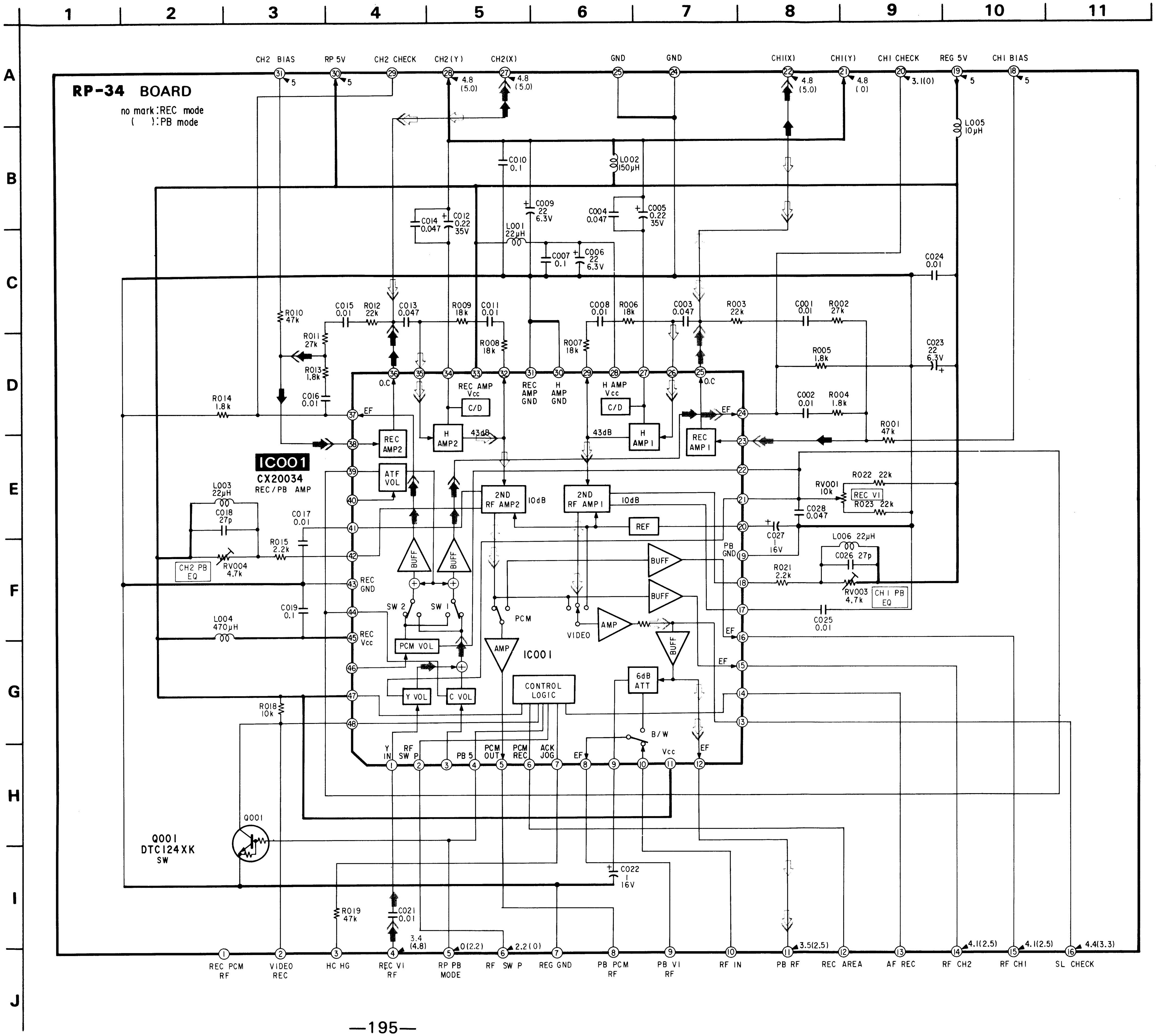
Soldering side: (SIDE A)	Parts on the soldering side being seen from the soldering are stated.
Component side: (SIDE B)	Parts on the component side being seen from the component are stated.

Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.



RP-34 (VIDEO, AUDIO RF SIGNAL REC/PB) SCHEMATIC DIAGRAM


1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H I J
RP-34 BOARD
no mark : REC mode
( ) : PB mode
CH2 BIAS
RP 5V
CH2 CHECK
CH2(Y)
CH2(X)
GND
GND
CH1(X)
CH1(Y)
CH1 CHECK
REG 5V
CH1 BIAS
4.8 (5.0)
4.8 (5.0)
4.8 (5.0)
4.8 (0)
3.1(0)
5
L005 10μH
C010 0.1
L002 150μH
C014 0.047
C012 0.22 35V
C009 22 6.3V
C004 0.047
C005 0.22 35V
L001 22μH
C007 0.1
C006 22 6.3V
C024 0.01
R010 47k
C015 0.01
R012 22k
C013 0.047
R009 18k
C011 0.01
C008 0.01
R006 18k
C003 0.047
R003 22k
C001 0.01
R002 27k
R011 27k
R013 1.8k
C016 0.01
R008 18k
R007 18k
R005 1.8k
C023 22 6.3V
R014 1.8k
C002 0.01
R004 1.8k
R001 47k
IC001
CX20034
REC/PB AMP
REC AMP Vcc
C/D
REC AMP GND
H AMP GND
H AMP Vcc
C/D
REC AMP2
H AMP2
43dB
43dB
H AMP1
REC AMP1
EF
0.C
0.C
EF
ATF VOL
2ND RF AMP2
10dB
2ND RF AMP1
10dB
REF
L003 22μH
C018 27p
C017 0.01
R015 2.2k
RV004 4.7k
CH2 PB EQ
BUFF
BUFF
BUFF
BUFF
REC GND
SW 2
SW 1
PCM
VIDEO
AMP
AMP
IC001
PB GND
REC Vcc
L004 470μH
C019 0.1
PCM VOL
Y VOL
C VOL
CONTROL LOGIC
6dB ATT
B/W
Vcc
EF
EF
EF
EF
R018 10k
Y IN
RF SW P
PB 5
PCM OUT
PCM REC
ACK JOG
RV001 10k
REC V1
R022 22k
R023 22k
C028 0.047
C027 1 16V
L006 22μH
C026 27p
R021 2.2k
RV003 4.7k
CH1 PB EQ
C025 0.01
Q001
Q001 DTC124XK SW
C022 1 16V
R019 47k
C021 0.01
3.4 (4.8)
0(2.2)
2.2(0)
3.5(2.5)
4.1(2.5)
4.1(2.5)
4.4(3.3)
REC PCM RF
VIDEO REC
HC HG
REC V1 RF
RP PB MODE
RF SW P
REG GND
PB PCM RF
PB V1 RF
RF IN
PB RF
REC AREA
AF REC
RF CH2
RF CH1
SL CHECK

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

- **Signal path**

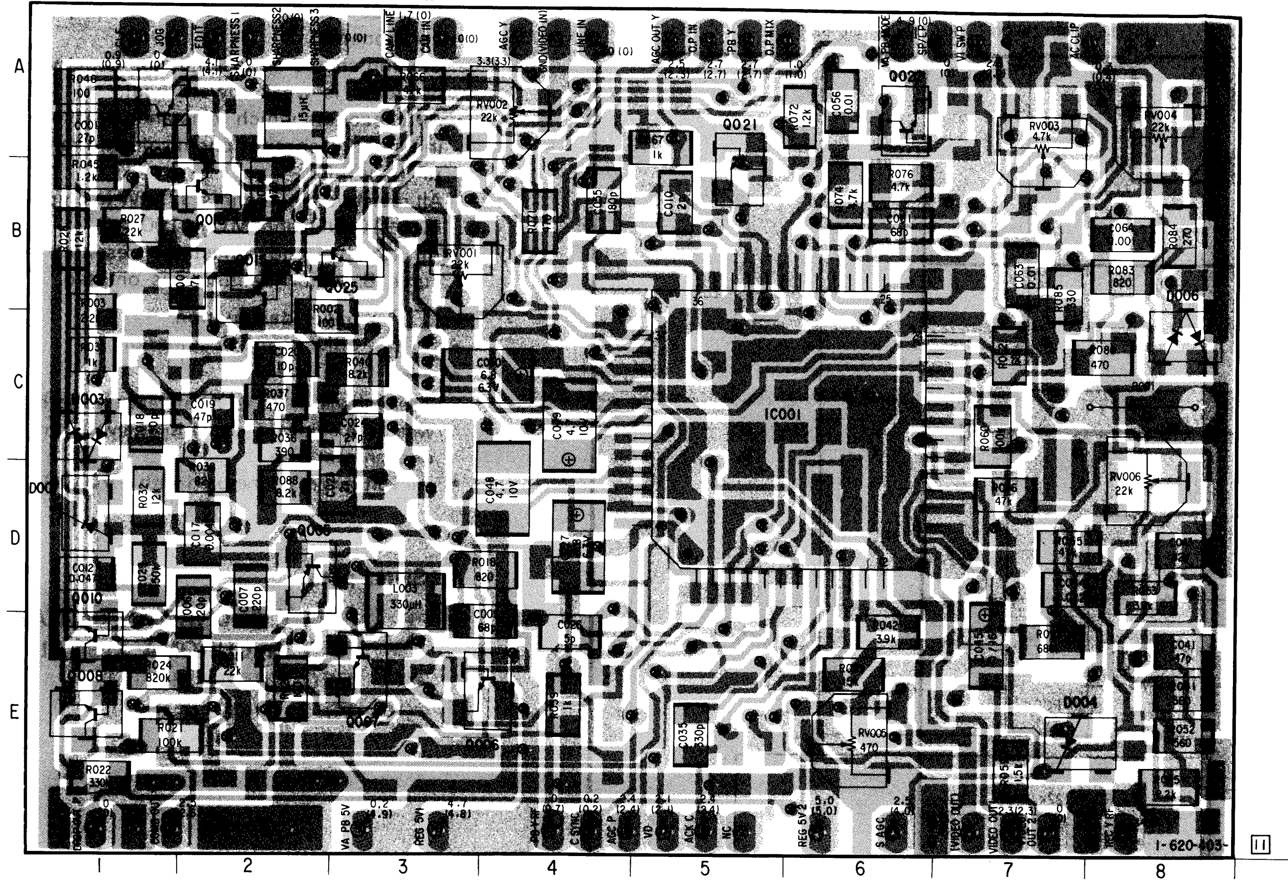
  ➡ :REC Y & CHROMA SIGNAL
  ⇨ :PB Y & CHROMA SIGNAL
  ➡ :REC AUDIO SIGNAL
  ⇨ :PB AUDIO SIGNAL

VY-9 (Y SIGNAL PROCESS) PRINTED WIRING BOARD

D001	A-16
D002	E-17
D003	C-1
D004	E-7
D005	C-11
D006	C-8
D007	D-1
IC001	C-5
Q001	A-12
Q002	A-1
Q003	E-16
Q004	D-16
Q005	D-2
Q006	E-4
Q007	E-3
Q008	E-1
Q009	E-17
Q010	E-1
Q013	C-17
Q014	B-16
Q015	B-2
Q016	B-2
Q018	E-10
Q019	B-13
Q020	A-14
Q021	B-5
Q022	A-6
Q023	B-10
Q024	C-11
Q025	B-3
Q026	A-16
RV001	B-3
RV002	A-4
RV003	A-7
RV004	A-8
RV005	E-6
RV006	D-8

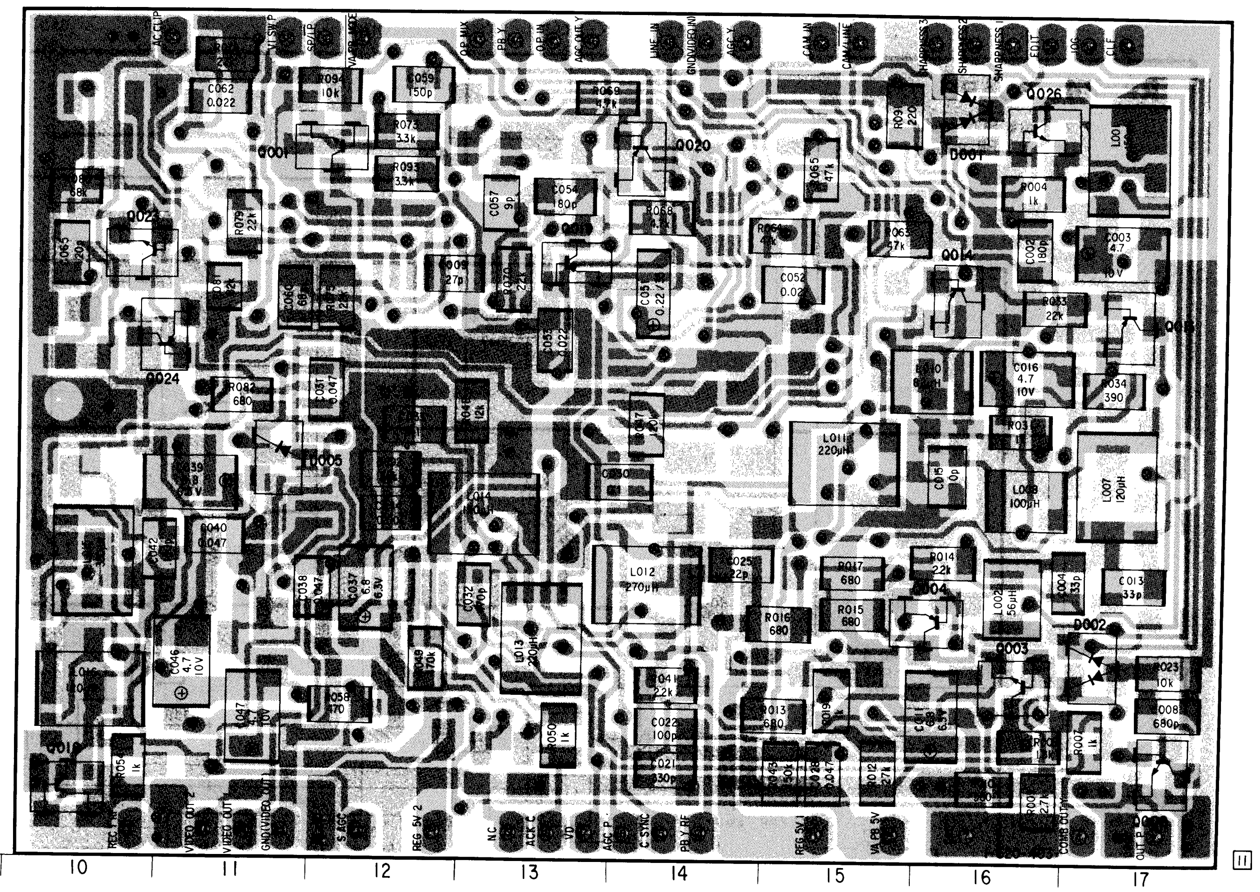
VY-9 BOARD (SIDE B)

no mark : REC mode
( ) : PB mode



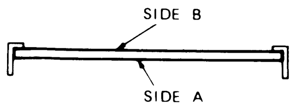
9

VY-9 BOARD (SIDE A)



Note (Printed Wiring Board):

- ⊗ : mark is through hole.
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ▩ : pattern of the rear side.
- ░ : B+ pattern.
- Digital transistor (VY-9: Q001, 009, 010, 021, 022) transistor with resistors.
  Refer to the VY-9 board schematic diagram for digital transistor.

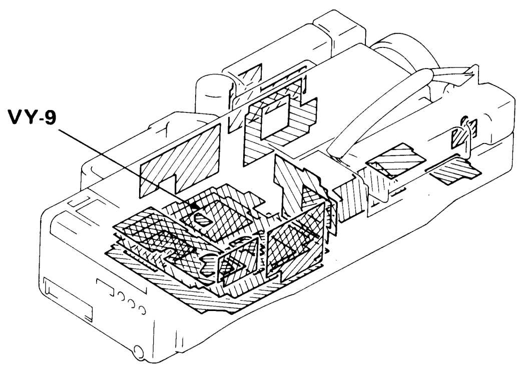


Note

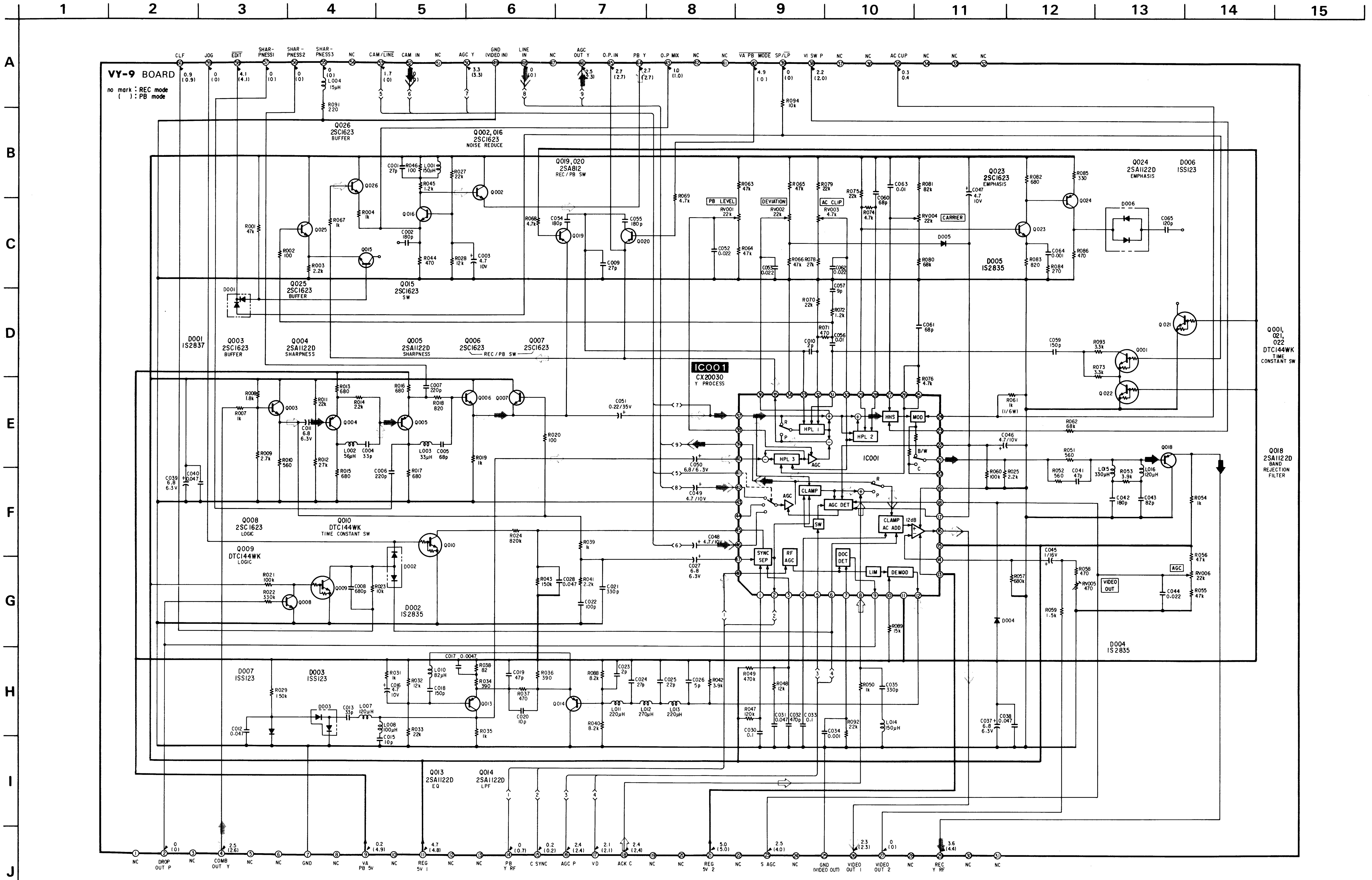
Soldering side: (SIDE A)	Parts on the soldering side being seen from the soldering are stated.
Component side: (SIDE B)	Parts on the component side being seen from the component are stated.

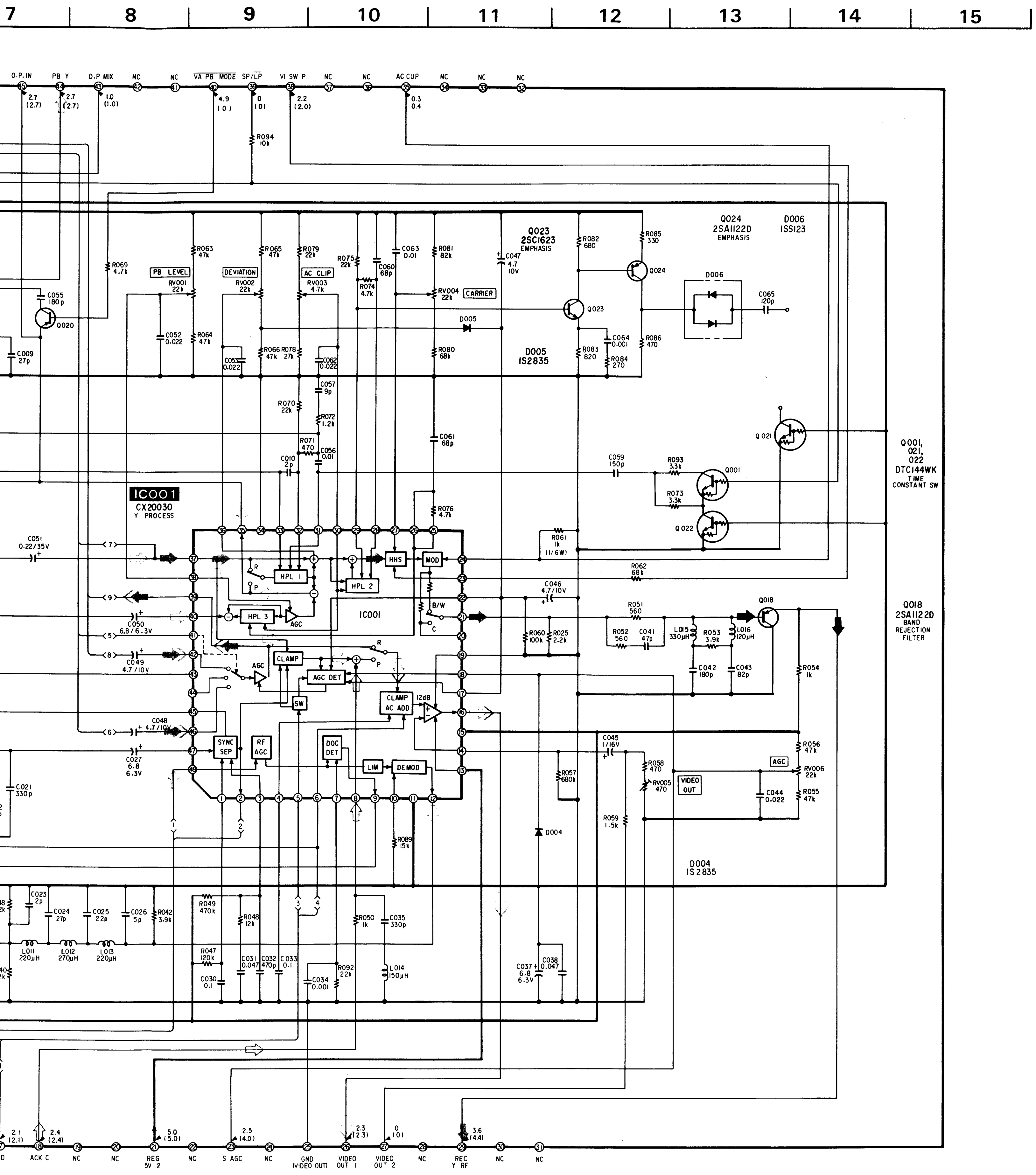
Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.



VY-9 (Y SIGNAL PROCESS) SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
VY-9 BOARD
no mark : REC mode
( ) : PB mode
CLF
JOG
EDIT
SHARPNESS1
SHARPNESS2
SHARPNESS3
NC
CAM/LINE
CAM IN
AGC Y
GND (VIDEO IN)
LINE IN
AGC OUT Y
O.P. IN
PB Y
O.P MIX
VA PB MODE
SP/LP
VI SW P
AC CUP
Q026
2SC1623
BUFFER
Q002, 016
2SC1623
NOISE REDUCE
Q019, 020
2SA812
REC/PB SW
Q023
2SC1623
EMPHASIS
Q024
2SA1122D
EMPHASIS
D006
1SS123
Q025
2SC1623
BUFFER
Q015
2SC1623
SW
D005
1S2835
PB LEVEL
DEVIATION
AC CLIP
CARRIER
D001
1S2837
Q003
2SC1623
BUFFER
Q004
2SA1122D
SHARPNESS
Q005
2SA1122D
SHARPNESS
Q006
2SC1623
Q007
2SC1623
REC/PB SW
IC001
CX20030
Y PROCESS
HPL 1
HPL 2
HPL 3
HHS
MOD
AGC
CLAMP
AGC DET
CLAMP AC ADD
12dB
SW
SYNC SEP
RF AGC
DOC DET
LIM
DEMOD
B/W
Q001, 021, 022
DTC144WK
TIME CONSTANT SW
Q018
2SA1122D
BAND REJECTION FILTER
VIDEO OUT
Q008
2SC1623
LOGIC
Q009
DTC144WK
LOGIC
Q010
DTC144WK
TIME CONSTANT SW
D002
1S2835
D004
1S2835
D007
1SS123
D003
1SS123
Q013
2SA1122D
EQ
Q014
2SA1122D
LPF
NC
DROP OUT P
COMB OUT Y
GND
VA PB 5V
REG 5V 1
PB Y RF
C SYNC
AGC P
VD
ACK C
REG 5V 2
S AGC
GND (VIDEO OUT)
VIDEO OUT 1
VIDEO OUT 2
REC Y RF


7
8
9
10
11
12
13
14
15
O.P. IN
PB Y
O.P. MIX
NC
VA PB MODE
SP/LP
VI SW P
AC CLIP
IC001
CX20030
Y PROCESS
PB LEVEL
RV001 22k
DEVIATION
RV002 22k
AC CLIP
RV003 4.7k
CARRIER
RV004 22k
Q023
2SC1623
EMPHASIS
Q024
2SA1122D
EMPHASIS
D006
1SS123
D005
1S2835
Q001, 021, 022
DTC144WK
TIME CONSTANT SW
Q018
2SA1122D
BAND REJECTION FILTER
D004
1S2835
HPL 1
HPL 2
HPL 3
AGC
HHS
MOD
B/W
CLAMP
AGC DET
SW
CLAMP AC ADD
12dB
SYNC SEP
RF AGC
DOC DET
LIM
DEMOD
VIDEO OUT
RV005 470
RV006 22k
ACK C
REG 5V 2
S AGC
GND (VIDEO OUT)
VIDEO OUT 1
VIDEO OUT 2
REC Y RF
L011 220μH
L012 270μH
L013 220μH
L014 150μH
L015 330μH
L016 120μH

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.

- ▭ : panel designation.
- ▭ : adjustment designation.
- ▬ : B+ line.

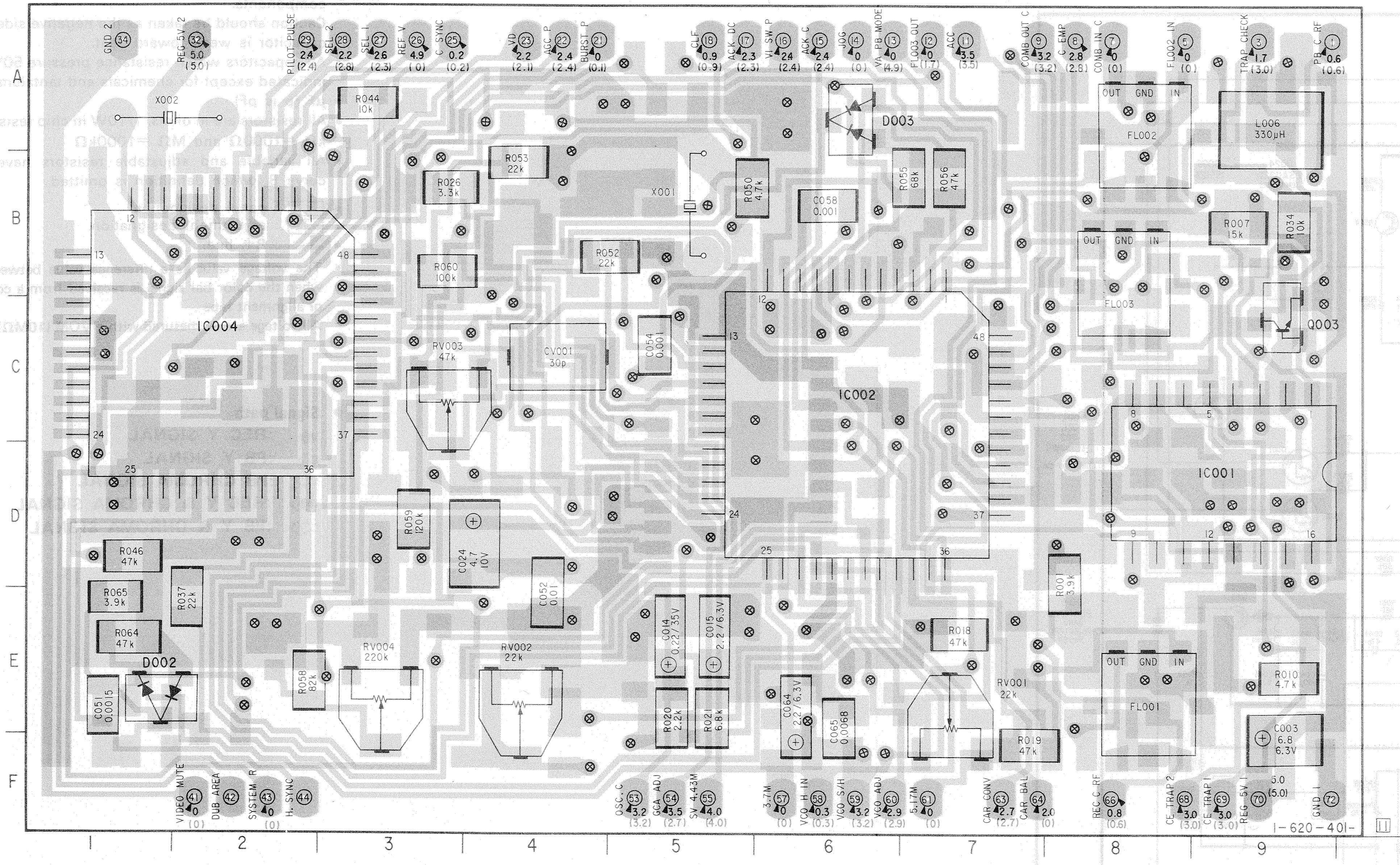
- **The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .**
- **All voltage are dc mesured with a VOM (10MΩ)**

- **Signal path**
  - ➡ :REC Y SIGNAL
  - ⇨ :PB Y SIGNAL
  - ⇨ :PB CHROMA SIGNAL
  - ➡ :REC Y & CHROMA SIGNAL
  - ⇨ :PB Y & CHROMA SIGNAL

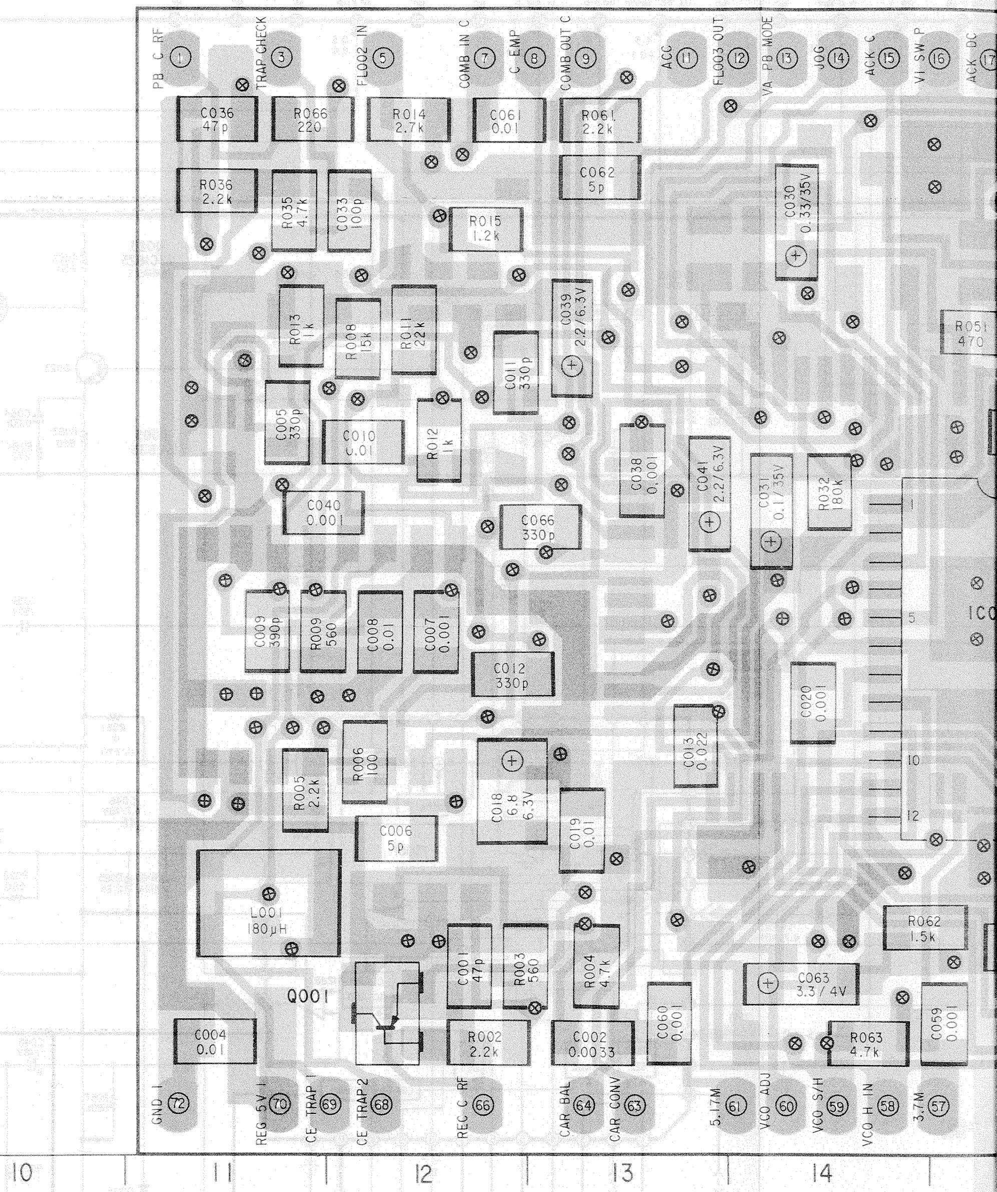
VC-11 (CHROMA SIGNAL PROCESS) PRINTED WIRING BOARD

CV001	C - 4
D001	A - 17
D002	E - 1
D003	A - 6
D004	E - 17
D005	E - 17
IC001	D - 9
IC002	C - 6
IC003	D - 15
IC004	C - 2
Q001	E - 12
Q002	B - 17
Q003	C - 9
Q004	A - 17
Q005	A - 16
RV001	E - 7
RV002	E - 4
RV003	C - 3
RV004	E - 3

VC-11 BOARD (SIDE B) no mark : REC mode
( ) : PB mode

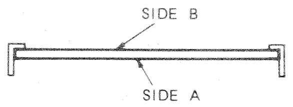

A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
GND 2
REG 5V 2
PILOT PULSE
SEL 2
SEL 1
REF V
C SYNC
VD
ACC P
BURST P
CLF
ACK DC
VI SW P
ACK C
JOG
VA PB MODE
FL003 OUT
ACC
COMB OUT C
C EMP
COMB IN C
FL002 IN
TRAP CHECK
PB C RF
X002
R044 10k
R053 22k
R026 3.3k
X001
R050 4.7k
D003
C058 0.001
R055 68k
R056 47k
FL002
L006 330μH
R007 15k
R034 10k
R052 22k
R060 100k
IC004
RV003 47k
CV001 30p
C054 0.001
IC002
FL003
Q003
IC001
R059 120k
C024 47 10V
C052 0.01
R046 47k
R065 3.9k
R037 22k
R064 47k
D002
C051 0.0015
R058 82k
RV004 220k
RV002 22k
C014 0.22/35V
C015 2.2/6.3V
R020 2.2k
R021 6.8k
C064 2.2/6.3V
C065 0.0068
R018 47k
RV001 22k
R019 47k
R001 3.9k
FL001
OUT GND IN
R010 4.7k
C003 6.8 6.3V
VIDEO MUTE
DUB AREA
SYSTEM R
H SYNC
OSC C
CGA ADJ
SV 4.43M
3.7M
VCO H IN
VCO S/H
VCO ADJ
5.17M
CAR CONV
CAR BAL
REC C RF
CE TRAP 2
CE TRAP 1
REG 5V 1
GND 1
1-620-401-

VC-11 BOARD (SIDE A)


10
11
12
13
14
PB C RF
TRAP CHECK
FL002 IN
COMB IN C
C EMP
COMB OUT C
ACC
FL003 OUT
VA PB MODE
JOG
ACK C
VI SW P
C036 47p
R066 220
R014 2.7k
C061 0.01
R061 2.2k
R036 2.2k
R035 4.7k
C033 100p
R015 1.2k
C062 5p
C030 0.33/35V
R013 1k
R008 15k
R011 22k
C039 2.2/6.3V
C011 330p
C005 330p
C010 0.01
R012 1k
C040 0.001
C066 330p
C038 0.001
C041 2.2/6.3V
C031 0.1/35V
R032 180k
R051 470
C009 390p
R009 560
C008 0.01
C007 0.001
C012 330p
C020 0.001
R005 2.2k
R006 100
C018 6.8 6.3V
C013 0.022
C006 5p
C019 0.01
L001 180μH
Q001
C001 47p
R003 560
R004 4.7k
C063 3.3/4V
R062 1.5k
C004 0.01
R002 2.2k
C002 0.0033
C060 0.001
R063 4.7k
C059 0.001
GND 1
REG 5V 1
CE TRAP 1
CE TRAP 2
REC C RF
CAR BAL
CAR CONV
5.17M
VCO ADJ
VCO S/H
VCO H IN
3.7M

Note (Printed Wiring Board):

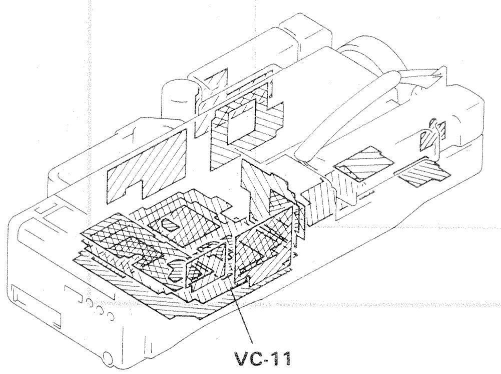
- ⊗ : mark is through hole.
- ○— : lead wire attached to the component side.
- ●— : lead wire attached to the soldering side.
- ▨ : pattern from the side which enables seeing.
- ▨ : pattern of the rear side.
- ▨ : B+ pattern.
- Digital transistor (VC-11: Q004, 005) transistor with resistors. Refer to the VC-11 board schematic diagram for digital transistor.
  sistor.

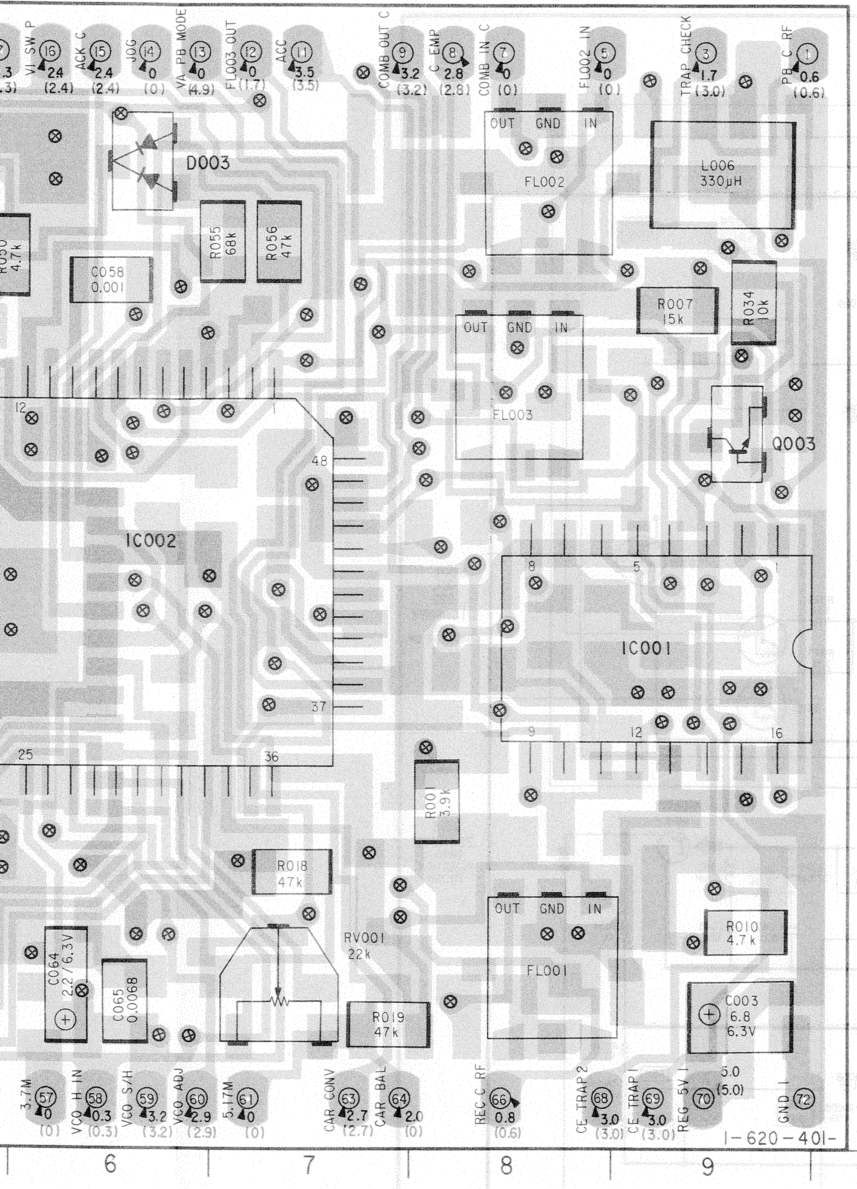

SIDE B
SIDE A

Note	
Soldering side: (SIDE A)	Parts on the soldering side being seen from the soldering are stated.
Component side: (SIDE B)	Parts on the component side being seen from the component are stated.

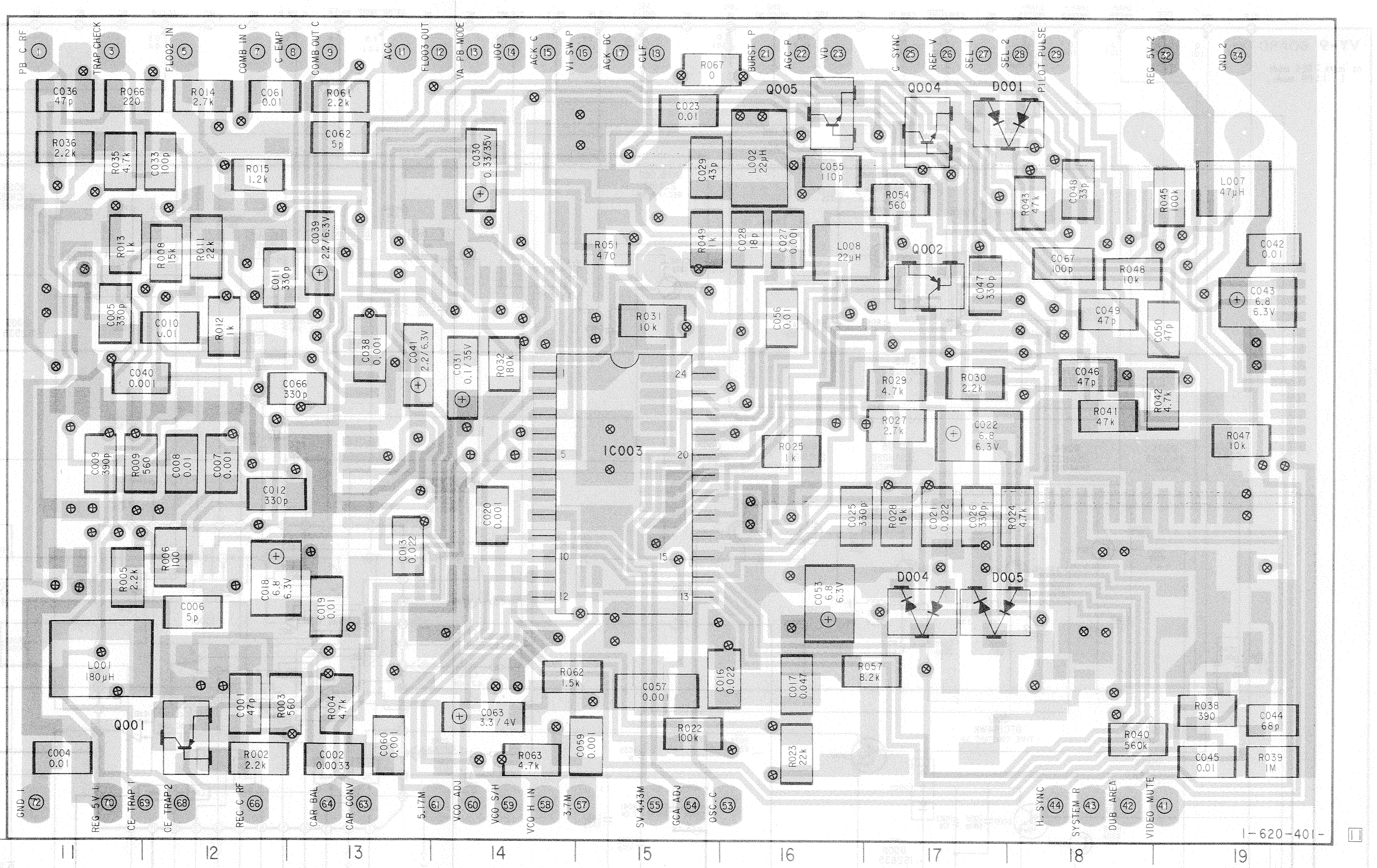
Regarding color indication of patterns

- * Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.




VI SW P
ACK C
JOG
VA PB MODE
FL003 OUT
ACC
COMB OUT C
C EMP
COMB IN C
FL002 IN
TRAP CHECK
PB C RF
D003
R055 68k
R056 47k
C058 0.001
FL002
OUT GND IN
L006 330μH
R007 15k
R034 10k
FL003
Q003
IC002
IC001
R001 3.9k
R018 47k
RV001 22k
R019 47k
C064 2.2 6.3V
C065 0.0068
FL001
R010 4.7k
C003 6.8 6.3V
3.7M
VCO H IN
VCO S/H
VCO ADJ
5.17M
CAR CONV
CAR BAL
REC C RF
CE TRAP 2
CE TRAP 1
REG 5V 1
GND 1
1-620-401-
6
7
8
9
10

VC-11 BOARD (SIDE A)


PB C RF
TRAP CHECK
FL002 IN
COMB IN C
C EMP
COMB OUT C
ACC
FL003 OUT
VA PB MODE
JOG
ACK C
VI SW P
ACK DC
CLF
BURST P
AGC P
VD
C SYNC
REF V
SEL 1
SEL 2
PILOT PULSE
REG 5V 2
GND 2
C036 47p
R066 220
R014 2.7k
C061 0.01
R061 2.2k
C062 5p
R036 2.2k
R035 4.7k
C033 100p
R015 1.2k
C039 2.2/6.3V
C030 0.33/35V
R067 0
C023 0.01
Q005
Q004
D001
C029 43p
L002 22μH
C055 110p
R054 560
R043 47k
C048 33p
R045 100k
L007 47μH
R013 1k
R008 15k
R011 22k
C011 330p
R051 470
R049 1k
C028 18p
C027 0.001
L008 22μH
Q002
C047 330p
C067 100p
R048 10k
C042 0.01
C043 6.8 6.3V
C005 330p
C010 0.01
R012 1k
C038 0.001
C041 2.2/6.3V
C031 0.1/35V
R032 180k
R031 10k
C056 0.01
C049 47p
C050 47p
C040 0.001
C066 330p
IC003
R029 4.7k
R030 2.2k
C046 47p
R042 4.7k
R027 2.7k
C022 6.8 6.3V
R041 47k
R047 10k
R025 1k
C009 390p
R009 560
C008 0.01
C007 0.001
C012 330p
C020 0.001
C025 330p
R028 15k
C021 0.022
C026 330p
R024 4.7k
R005 2.2k
R006 100
C018 6.8 6.3V
C013 0.022
C006 5p
C019 0.01
D004
D005
C053 6.8 6.3V
L001 180μH
C001 47p
R003 560
R004 4.7k
R062 1.5k
C057 0.001
C016 0.022
C017 0.047
R057 8.2k
Q001
C063 3.3/4V
R022 100k
R038 390
C044 68p
R040 560k
C004 0.01
R002 2.2k
C002 0.0033
C060 0.001
R063 4.7k
C059 0.001
R023 22k
C045 0.01
R039 1M
GND 1
REG 5V 1
CE TRAP 1
CE TRAP 2
REC C RF
CAR BAL
CAR CONV
5.17M
VCO ADJ
VCO S/H
VCO H IN
3.7M
SV 4.43M
CGA ADJ
OSC C
H SYNC
SYSTEM R
DUB AREA
VIDEO MUTE
1-620-401-
11
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18
19

being
stated.
being
nt are

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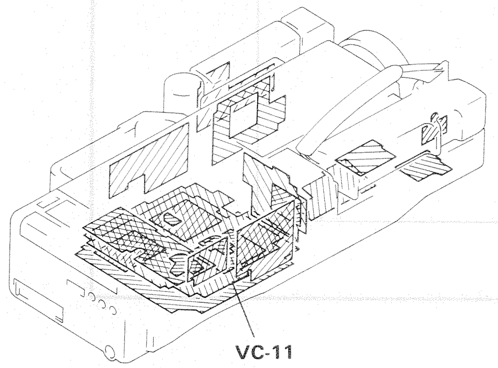
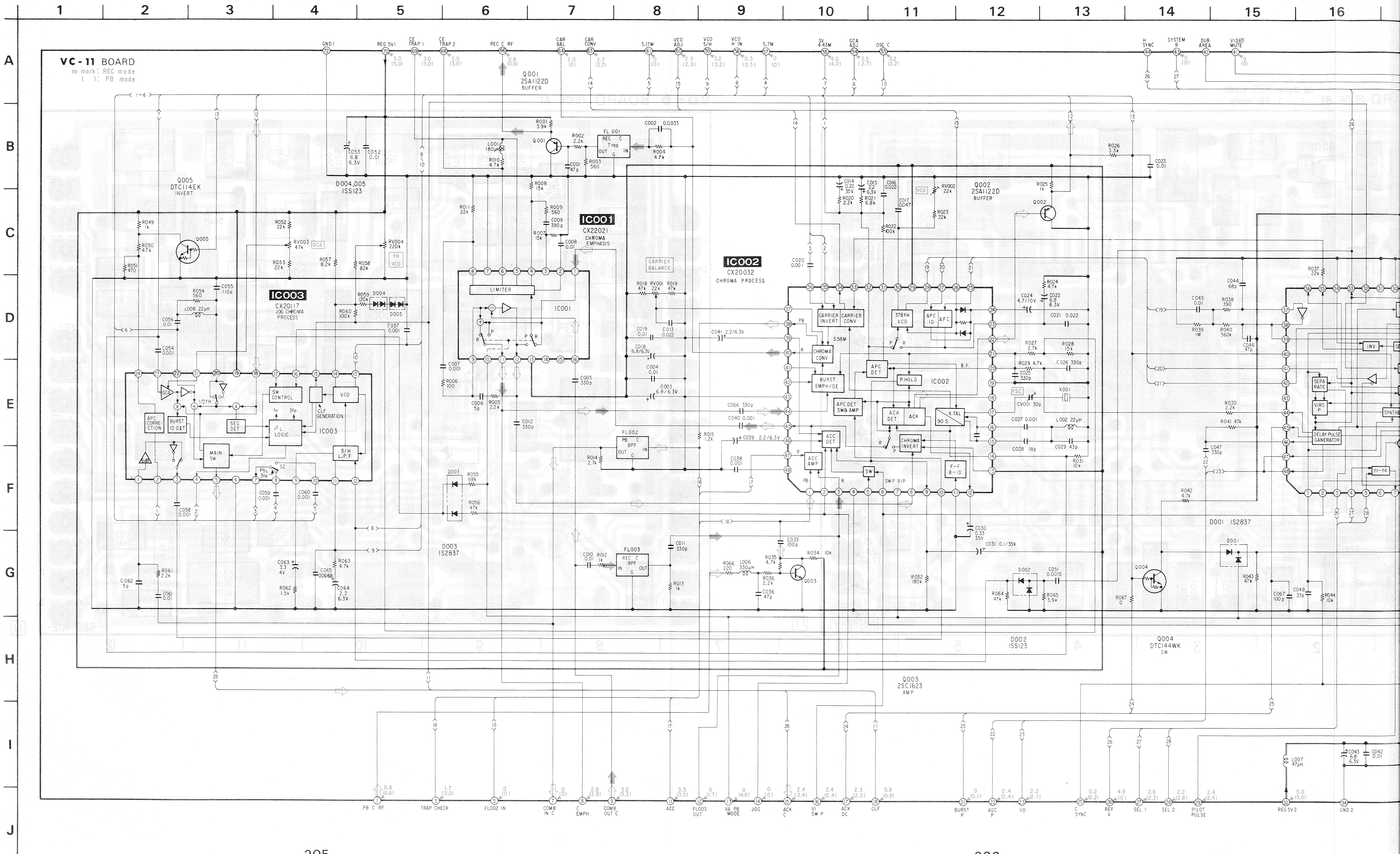
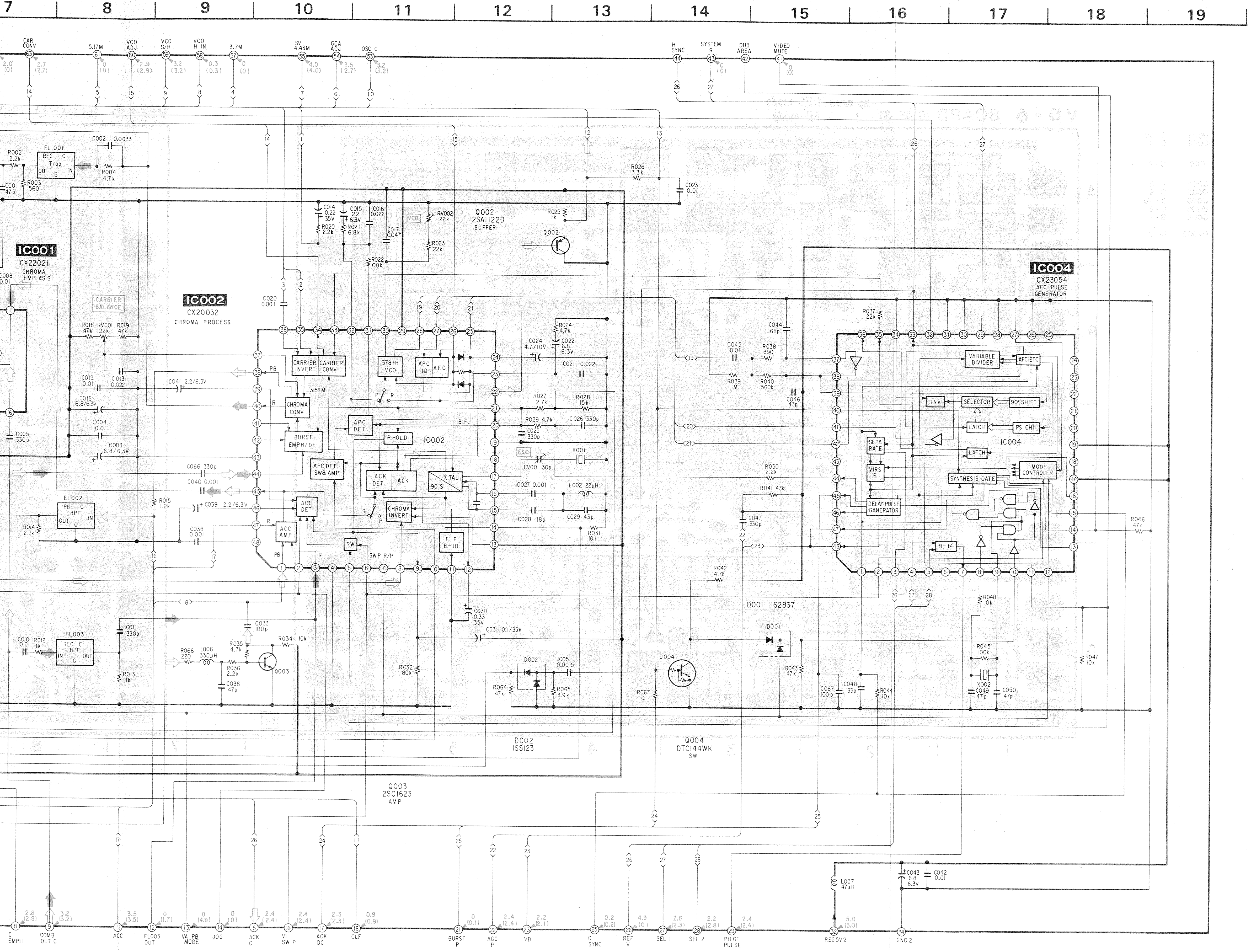
pattern

urface



VC-11 (CHROMA SIGNAL PROCESS) SCHEMATIC DIAGRAM


VC-11 BOARD
no mark : REC mode
( ) : PB mode
IC001
CX22021
CHROMA EMPHASIS
LIMITER
IC002
CX20032
CHROMA PROCESS
CARRIER INVERT
CARRIER CONV
378fH VCO
APC ID
AFC
CHROMA CONV
BURST EMPH/DE
APC DET
P.HOLD
APC DET SW& AMP
ACK DET
ACK
X TAL 90 S
CHROMA INVERT
ACC DET
ACC AMP
SW
F-F B-ID
IC003
CX20117
J00 CHROMA PROCESS
GCA
APC CORRECTION
BURST ID.DET
SEG DET
SW CONTROL
CLF GENERATION
VCO
I²L LOGIC
MAIN SW
S/H L.P.F
Q001 2SA1122D BUFFER
Q002 2SA1122D BUFFER
Q003 2SC1623 AMP
Q004 DTC144WK SW
Q005 DTC114EK INVERT
D001 1S2837
D002 1SS123
D003 1S2837
D004,005 1SS123
FL001 REC C Trap
FL002 PB C BPF
FL003 REC C BPF
CARRIER BALANCE
GCA
fH VCO
VCO
FSC
INV
SEPA RATE
VIRS P
DELAY PULSE GENERATOR
GND1
REG 5V1
CE TRAP 1
CE TRAP 2
REC C RF
CAR BAL
CAR CONV
5.17M
VCO ADJ
VCO S/H
VCO H IN
3.7M
SV 4.43M
GCA ADJ
OSC C
H SYNC
SYSTEM R
DUB AREA
VIDEO MUTE
PB C RF
TRAP CHECK
FL002 IN
COMB IN C
C EMPH
COMB OUT C
ACC
FL003 OUT
VA PB MODE
JOG
ACK C
V1 SW P
ACK DC
CLF
BURST P
AGC P
VD
C SYNC
REF V
SEL 1
SEL 2
PILOT PULSE
REG5V2
GND2
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J


7
8
9
10
11
12
13
14
15
16
17
18
19
CAR CONV
5.17M
VCO ADJ
VCO S/H
VCO H IN
3.7M
SV 4.43M
GCA ADJ
OSC C
H SYNC
SYSTEM R
DUB AREA
VIDEO MUTE
FL001
REC C Trap
IC001
CX22021
CHROMA EMPHASIS
CARRIER BALANCE
IC002
CX20032
CHROMA PROCESS
CARRIER INVERT
CARRIER CONV
CHROMA CONV
BURST EMPH/DE
APC DET SW& AMP
ACC DET
ACC AMP
APC DET
P.HOLD
ACK DET
ACK
CHROMA INVERT
F-F B-ID
SW
SWP R/P
378fH VCO
APC ID
AFC
X TAL
Q002
2SA1122D
BUFFER
VCO
FSC
FL002
PB C BPF
FL003
REC C BPF
Q003
2SC1623
AMP
D002
1SS123
Q004
DTC144WK
SW
D001 1S2837
IC004
CX23054
AFC PULSE GENERATOR
VARIABLE DIVIDER
AFC ETC
INV
SELECTOR
90° SHIFT
LATCH
PS CHI
SEPA RATE
VIRS P
DELAY PULSE GENERATOR
SYNTHESIS GATE
MODE CONTROLER
C EMPH
COMB OUT C
ACC
FL003 OUT
VA PB MODE
JOG
ACK C
VI SW P
ACK DC
CLF
BURST P
AGC P
VD
C SYNC
REF V
SEL 1
SEL 2
PILOT PULSE
REG5V2
GND 2

Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)

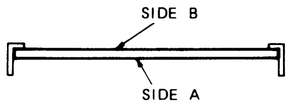
- **Signal path**

➡ :REC CHROMA SIGNAL
⇨ :PB CHROMA SIGNAL

VD-6 (COMB TYPE FILTER) PRINTED WIRING BOARD

Note (Printed Wiring Board):

- ⊗ : **mark is through hole.**
- ○— : lead wire attached to the **component side.**
- ●— : lead wire attached to the **soldering side.**
- ▨ : pattern from the side which enables seeing.
- ░ : pattern of the rear side.
- ▩ : B+ pattern.
- **Digital transistor (VD-6: Q002, 003, 005) tansistor with resistor. Ref to the VD-6 board schematic diagram for digital transistor.**


SIDE B
SIDE A

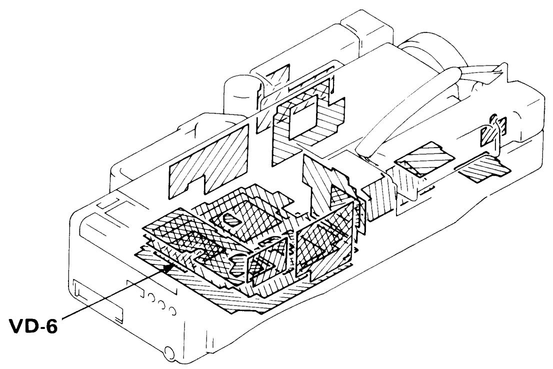
D001	B - 10
D003	C - 9
IC001	C - 4
Q001	A - 2
Q002	C - 9
Q003	C - 10
Q005	C - 5
Q006	B - 11
RV002	D - 2

Note

Soldering side: (SIDE A)	**Parts on the soldering side being seen from the soldering are stated.**
Component side: (SIDE B)	**Parts on the component side being seen from the component are stated.**

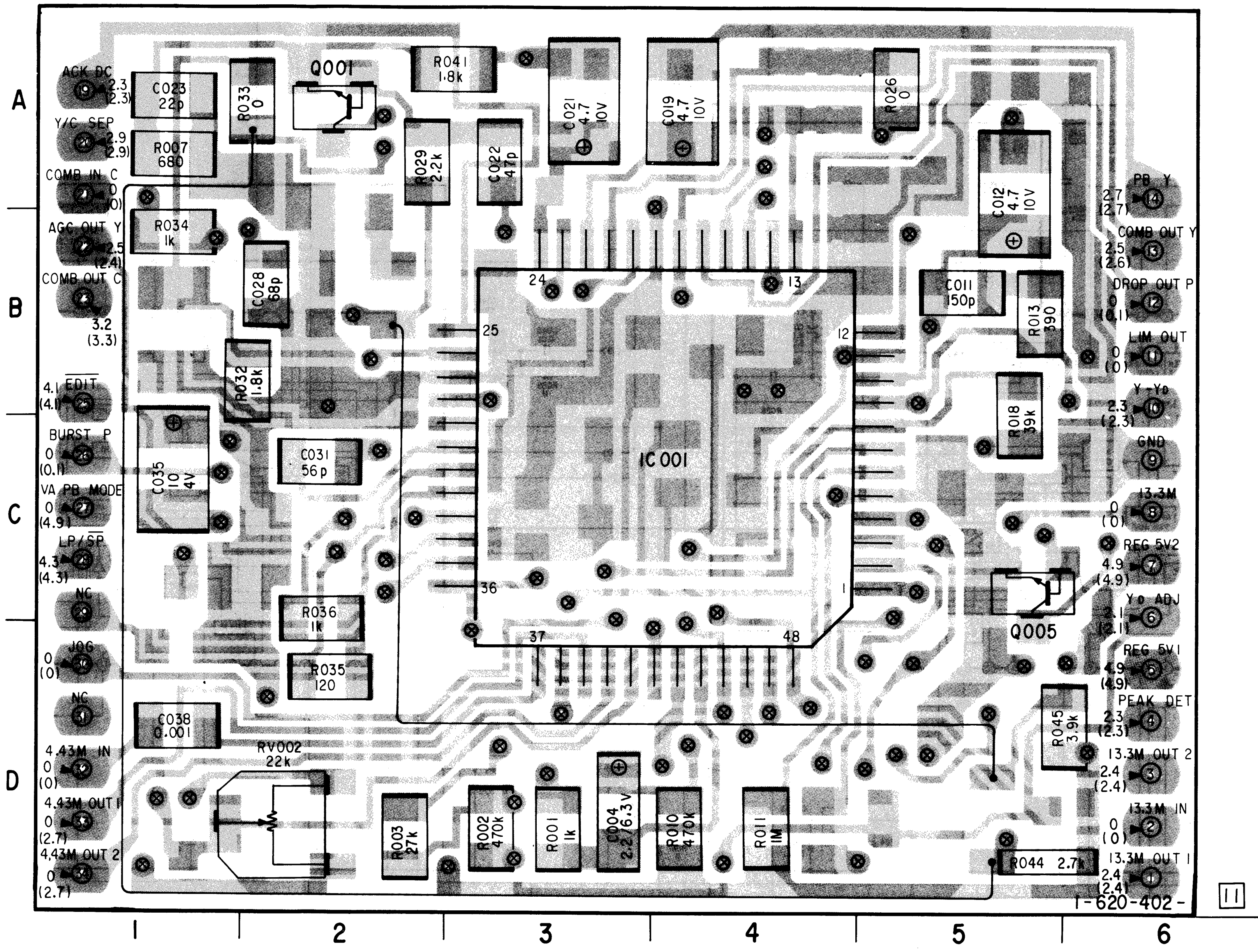
Regarding color indication of patterns

- **Patterns being seen in the state from the surface side are indicated in gray pattern and red pattern (B+ pattern).**
- **Pattern being seen in the state of the rear surface side is indicated in green pattern.**

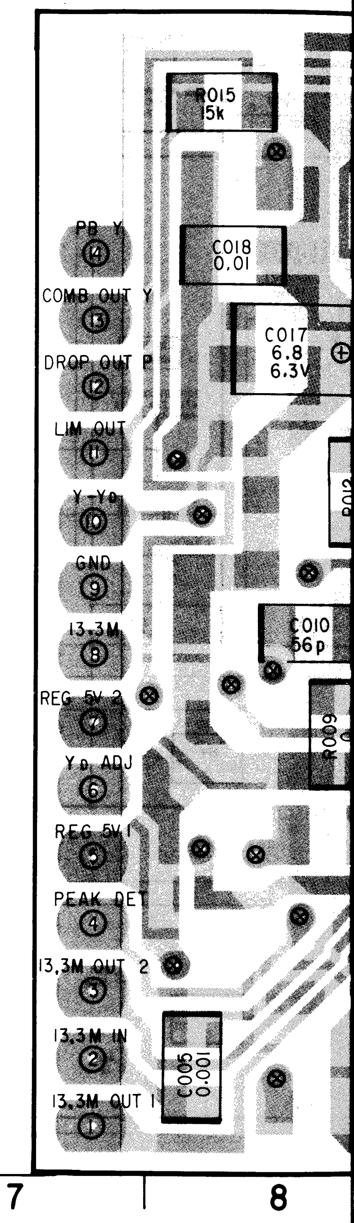


VD-6 BOARD (SIDE B)

no mark : REC mode
( ) : PB mode

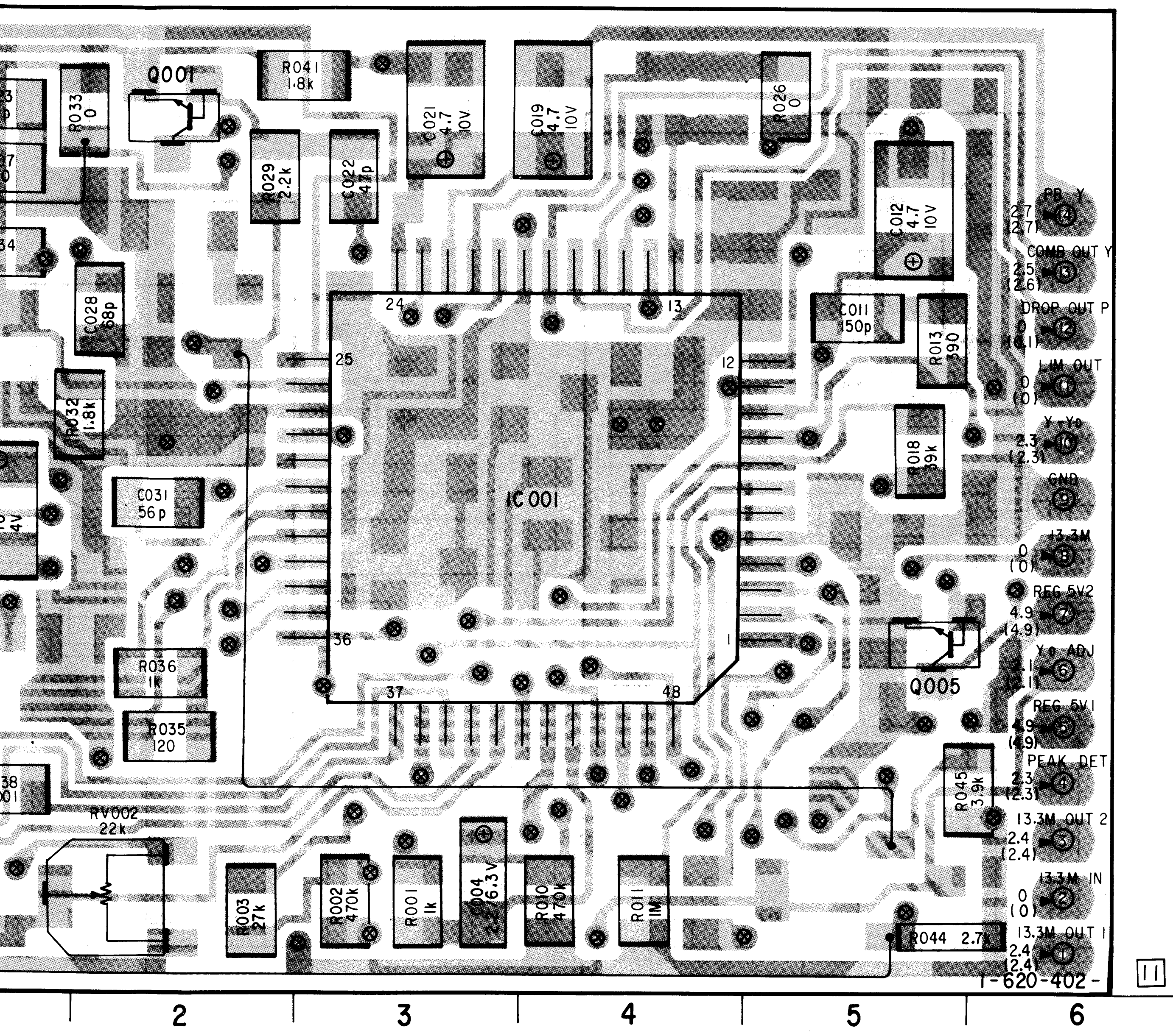

A
B
C
D
1
2
3
4
5
6
ACK DC
2.3
(2.3)
Y/C SEP
2.9
(2.9)
COMB IN C
0
(0)
AGC OUT Y
2.5
(2.4)
COMB OUT C
3.2
(3.3)
4.1
(4.1)
EDIT
BURST P
0
(0.1)
VA PB MODE
0
(4.9)
LP/SP
4.3
(4.3)
NC
JOG
0
(0)
NC
4.43M IN
0
(0)
4.43M OUT 1
0
(2.7)
4.43M OUT 2
0
(2.7)
C023
22p
R033
0
Q001
R041
1.8k
C021
4.7
10V
C019
4.7
10V
R026
0
R007
680
R029
2.2k
C022
47p
R034
1k
C028
68p
R032
1.8k
C035
10
4V
C031
56p
IC001
24
13
25
12
36
1
37
48
R036
1k
R035
120
C038
0.001
RV002
22k
R003
27k
R002
470k
R001
1k
C004
2.2/6.3V
R010
470k
R011
1M
C012
4.7
10V
C011
150p
R013
390
R018
39k
Q005
R045
3.9k
R044 2.7k
1-620-402-
11
PB Y
2.7
(2.7)
COMB OUT Y
2.5
(2.6)
DROP OUT P
0
(0.1)
LIM OUT
0
(0)
Y-Yo
2.3
(2.3)
GND
13.3M
0
(0)
REG 5V2
4.9
(4.9)
Yo ADJ
2.1
(2.1)
REG 5V1
4.9
(4.9)
PEAK DET
2.3
(2.3)
13.3M OUT 2
2.4
(2.4)
13.3M IN
0
(0)
13.3M OUT 1
2.4
(2.4)

VD-6 BOARD (SI

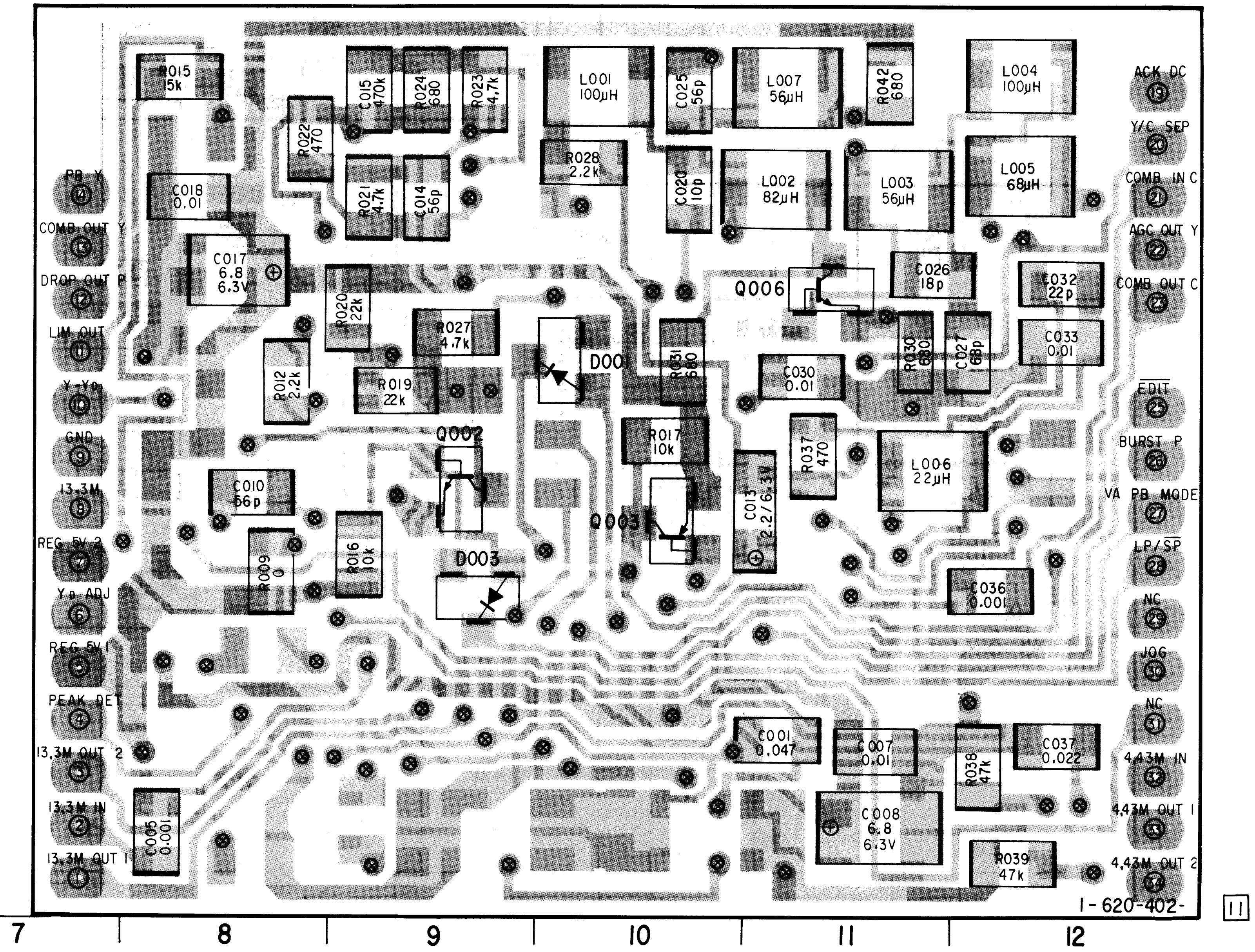

7
8
R015
15k
C018
0.01
C017
6.8
6.3V
PB Y
COMB OUT Y
DROP OUT P
LIM OUT
Y-Yo
GND
13.3M
REG 5V 2
Yo ADJ
REG 5V1
PEAK DET
13.3M OUT 2
13.3M IN
13.3M OUT 1
C010
56p
C005
0.001

OARD (SIDE B)

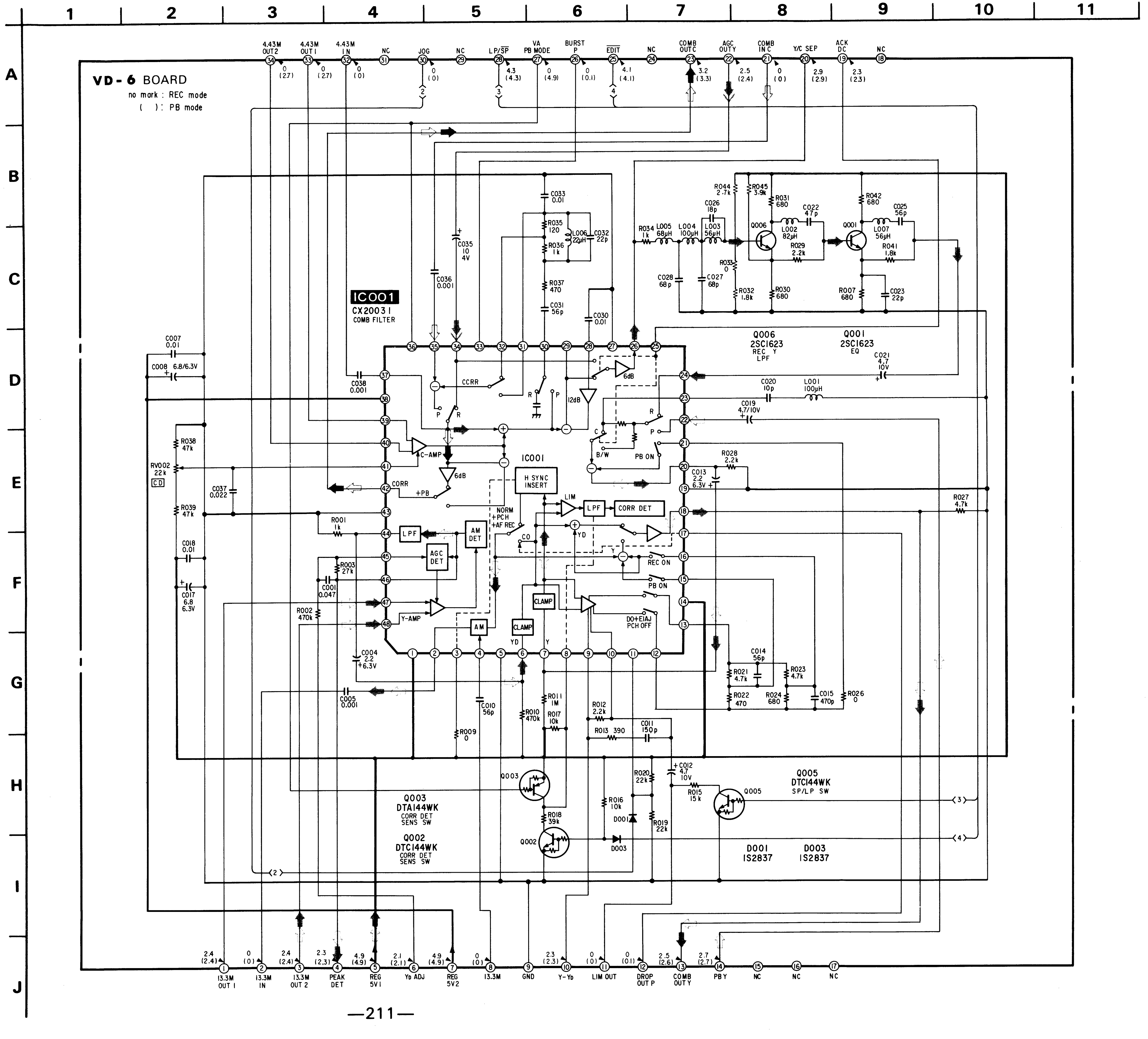
no mark : REC mode
( ) : PB mode


Q001
R033 0
R041 1.8k
C021 4.7 10V
C019 4.7 10V
R026 0
R029 2.2k
C022 47p
C012 4.7 10V
C028 68p
IC001
24
13
25
12
36
1
37
48
C011 150p
R013 390
R032 1.8k
R018 39k
C031 56p
R036 1k
R035 120
Q005
R045 3.9k
RV002 22k
R003 27k
R002 470k
R001 1k
C004 2.2/6.3V
R010 470k
R011 1M
R044 2.7k
PB Y 2.7 (2.7) 14
COMB OUT Y 2.5 (2.6) 13
DROP OUT P 0 (0.1) 12
LIM OUT 0 (0) 11
Y-Yo 2.3 (2.3) 10
GND 9
13.3M 0 (0) 8
REG 5V2 4.9 (4.9) 7
Yo ADJ 2.1 (2.1) 6
REG 5V1 4.9 (4.9) 5
PEAK DET 2.3 (2.3) 4
13.3M OUT 2 2.4 (2.4) 3
13.3M IN 0 (0) 2
13.3M OUT 1 2.4 (2.4) 1
1-620-402-
11
2
3
4
5
6

VD-6 BOARD (SIDE A)


R015 15k
C015 470k
R024 680
R023 4.7k
L001 100μH
C025 56p
L007 56μH
R042 680
L004 100μH
R022 470
R028 2.2k
C020 10p
L002 82μH
L003 56μH
L005 68μH
C018 0.01
R021 4.7k
C014 56p
C017 6.8 6.3V
R020 22k
R027 4.7k
D001
R031 680
Q006
C026 18p
C032 22p
C033 0.01
R030 680
C027 68p
C030 0.01
R012 2.2k
R019 22k
Q002
R017 10k
R037 470
L006 22μH
C010 56p
C013 2.2/6.3V
Q003
R009 0
R016 10k
D003
C036 0.001
C001 0.047
C007 0.01
R038 47k
C037 0.022
C005 0.001
C008 6.8 6.3V
R039 47k
PB Y 14
COMB OUT Y 13
DROP OUT P 12
LIM OUT 11
Y-Yo 10
GND 9
13.3M 8
REG 5V 2 7
Yo ADJ 6
REG 5V1 5
PEAK DET 4
13.3M OUT 2 3
13.3M IN 2
13.3M OUT 1 1
ACK DC 19
Y/C SEP 20
COMB IN C 21
AGC OUT Y 22
COMB OUT C 23
EDIT 25
BURST P 26
VA PB MODE 27
LP/SP 28
NC 29
JOG 30
NC 31
4.43M IN 32
4.43M OUT 1 33
4.43M OUT 2 34
1-620-402-
11
7
8
9
10
11
12

VD-6 (COMB TYPE FILTER) SCHEMATIC DIAGRAM


VD-6 BOARD
no mark : REC mode
( ) : PB mode
IC001
CX20031
COMB FILTER
4.43M OUT2
4.43M OUT1
4.43M IN
NC
JOG
LP/SP
VA PB MODE
BURST P
EDIT
COMB OUTC
AGC OUTY
COMB INC
Y/C SEP
ACK DC
Q006
2SC1623
REC Y LPF
Q001
2SC1623
EQ
C-AMP
CCRR
CORR
+PB
LPF
AM DET
AGC DET
Y-AMP
H SYNC INSERT
NORM
+PCH
+AF REC
LIM
CORR DET
CLAMP
AM
B/W
PB ON
REC ON
DO+EIAJ PCH OFF
12dB
6dB
Q003
DTA144WK
CORR DET SENS SW
Q002
DTC144WK
CORR DET SENS SW
Q005
DTC144WK
SP/LP SW
D001
1S2837
D003
1S2837
13.3M OUT 1
13.3M IN
13.3M OUT 2
PEAK DET
REG 5V1
Yb ADJ
REG 5V2
13.3M
GND
Y-Yb
LIM OUT
DROP OUT P
COMB OUT Y
PB Y
NC
NC
NC
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J

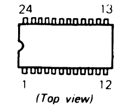
Note (Schematic Diagram):

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors which resistance pressure 50V or less are not indicated except for chemicals and tantalums. The unit is all μF (p is pF).
- All resistors are in ohms, 1/10W in chip resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ▭ : panel designation.
- ▭ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator or alignment tape .
- All voltage are dc mesured with a VOM (10MΩ)

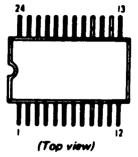
- **Signal path**
  - ➡ :REC Y SIGNAL
  - ⇨ :PB Y SIGNAL
  - ➡ :REC CHROMA SIGNAL
  - ⇨ :PB CHROMA SIGNAL
  - ➡ :REC Y & CHROMA SIGNAL

4-3. SEMICONDUCTORS

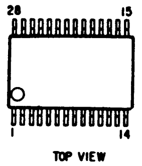
AN2510S


24
13
1
12
(Top view)

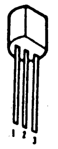
CX20114
CX20117
CX20180
µPD6105G
µPD6107G


24
13
1
12
(Top view)

CXD1030M


28
15
1
14
TOP VIEW

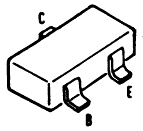
S-81250AG



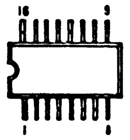
Pin 1. Ground
2. Input
3. Output

2SA1037K
2SA1122
2SA1162
2SA1226
2SA812
2SB624
2SC1623
2SC2223
2SC2412
2SC2712
2SC2757
2SC2812

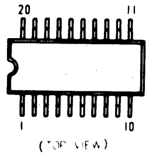
2SC3052
DTA114EK
DTA124EK
DTA144EK
DTA144TK
DTA144WK
DTC114EK
DTC124EK
DTC124XK
DTC143TK
DTC144EK
DTC144TK
DTC144WK



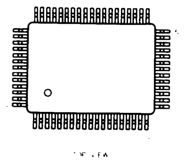
BA6303F
CX20115A
CX22021
TC4052BF
TC4526BF
µPD4052BG
µPD4053BG
µPD4538BG
µPD74HC157G
µPD74HC174G



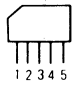
CX7991


20
11
1
10
(TOP VIEW)

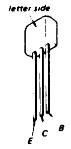
CXP5048H-031Q
CXP5048H-040Q
µPD7502G



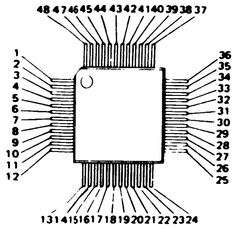
TA7060AP



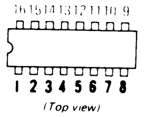
2SA1175


letter side
E
C
B

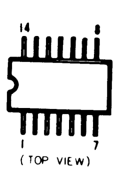
CX20030
CX20031
CX20032
CX20034
CX20037A
CX20053
CX20055
CX20056
CX20151
CX23047B
CX23054
CXD1073Q


48 47 46 45 44 43 42 41 40 39 38 37
1 2 3 4 5 6 7 8 9 10 11 12
36 35 34 33 32 31 30 29 28 27 26 25
13 14 15 16 17 18 19 20 21 22 23 24

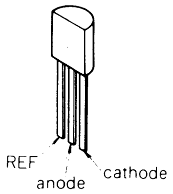
CXA1042M
MSM6411B-26GS-VK
TA7733F


16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)

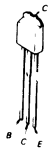
NJM3403AM
TC4066BF
TC74HC04F
µPC324G2
µPC339G2
µPD4066BG
µPD4069UBG
µPD74HC02G
µPD74HC04G


14
8
1
7
(TOP VIEW)

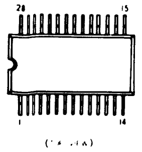
TL431CLPB


REF
anode
cathode

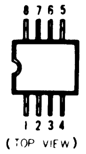
2SA1385



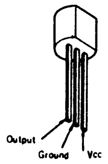
CX20035
CX20036
CX23039



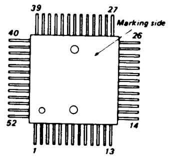
CXB0026M
MB3763PF
µPC393G2
µPC4250G2


8 7 6 5
1 2 3 4
(TOP VIEW)

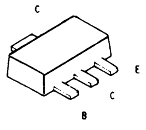
S-8054ALB


Output
Ground
Vcc

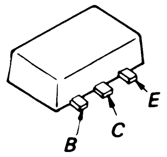
µPD7508G


39
27
Marking side
26
40
52
14
1
13

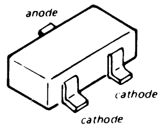
2SB1114
2SD1664



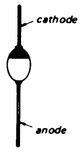
2SD999
2SD1366
2SD1615



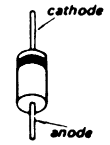
1S2835
DAP202K
MA151WA


anode
cathode
cathode

1SS187
1SS190

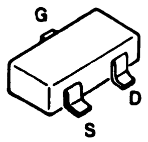

cathode
anode

HZ4ALL
RD8.2E-B2
RD13E-B2

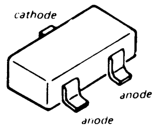

cathode
anode

GP-2S09-B

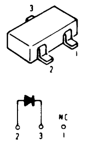
2SK94
2SK160
2SK209
2SK209G
2SK303



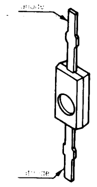
1S2837
DAN202K
MA151WK


cathode
anode
anode

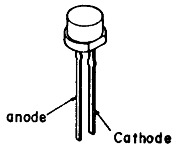
1SS193
1SS220
E10DS2
E10QS03
RD5.1M-B3
RD10M-B2
RD12M-B2



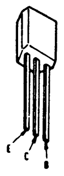
1T32
1T32-2



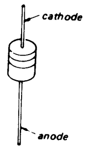
TLR147


anode
Cathode

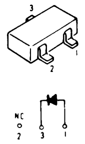
DTA144ES



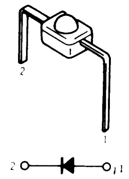
1SS119
1SS133
1SS148


cathode
anode

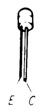
1SS196



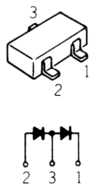
GL-1EG102
GL-1HY102



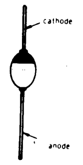
NJL7141E-S



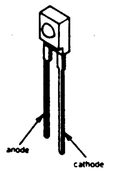
1SS123
DA204K
MA152WA
MA153
MA157



1SS222


cathode
anode

GL-450S


anode
cathode

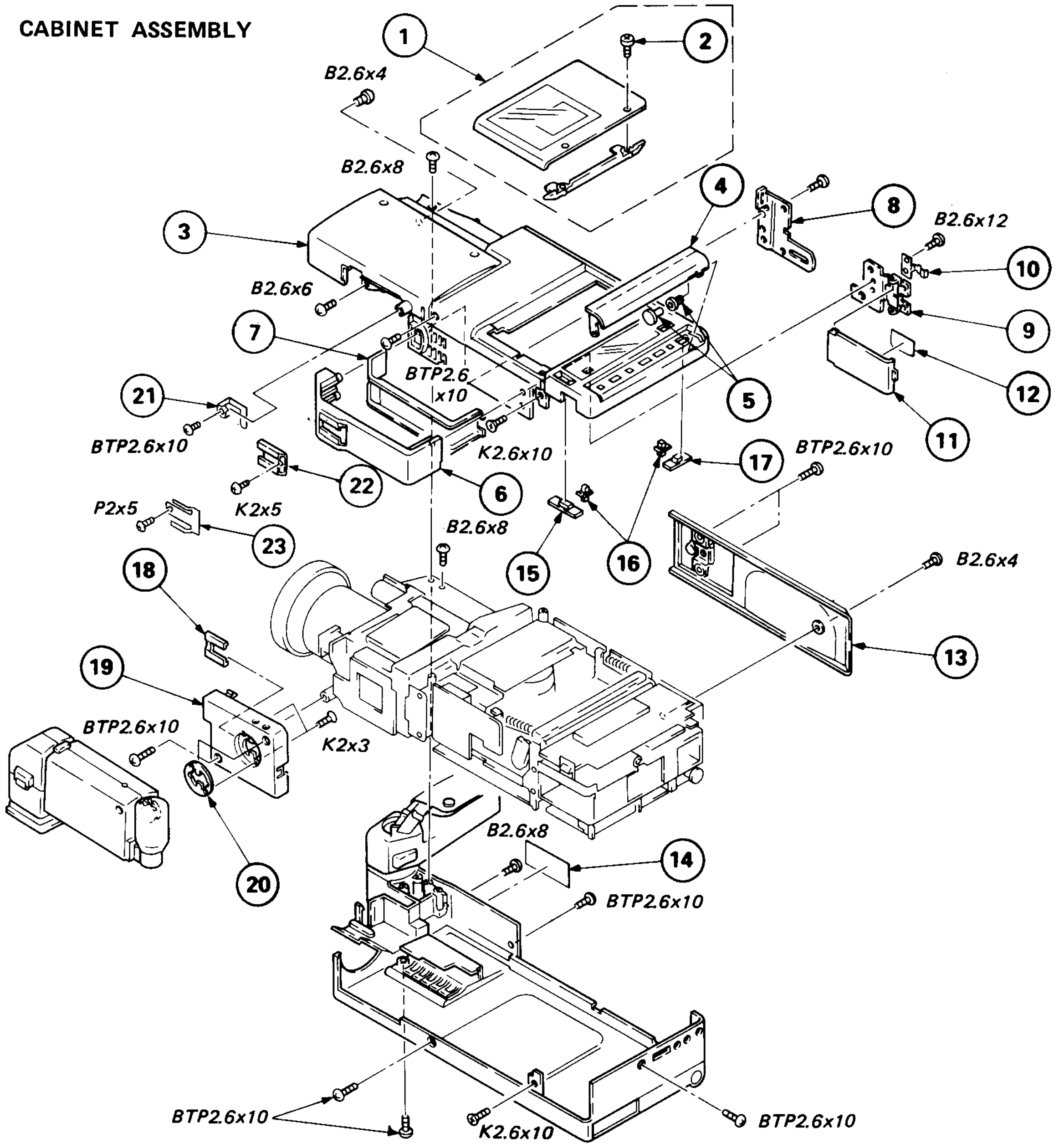
SECTION 5
EXPLODED VIEWS

NOTE:

- Itmes with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

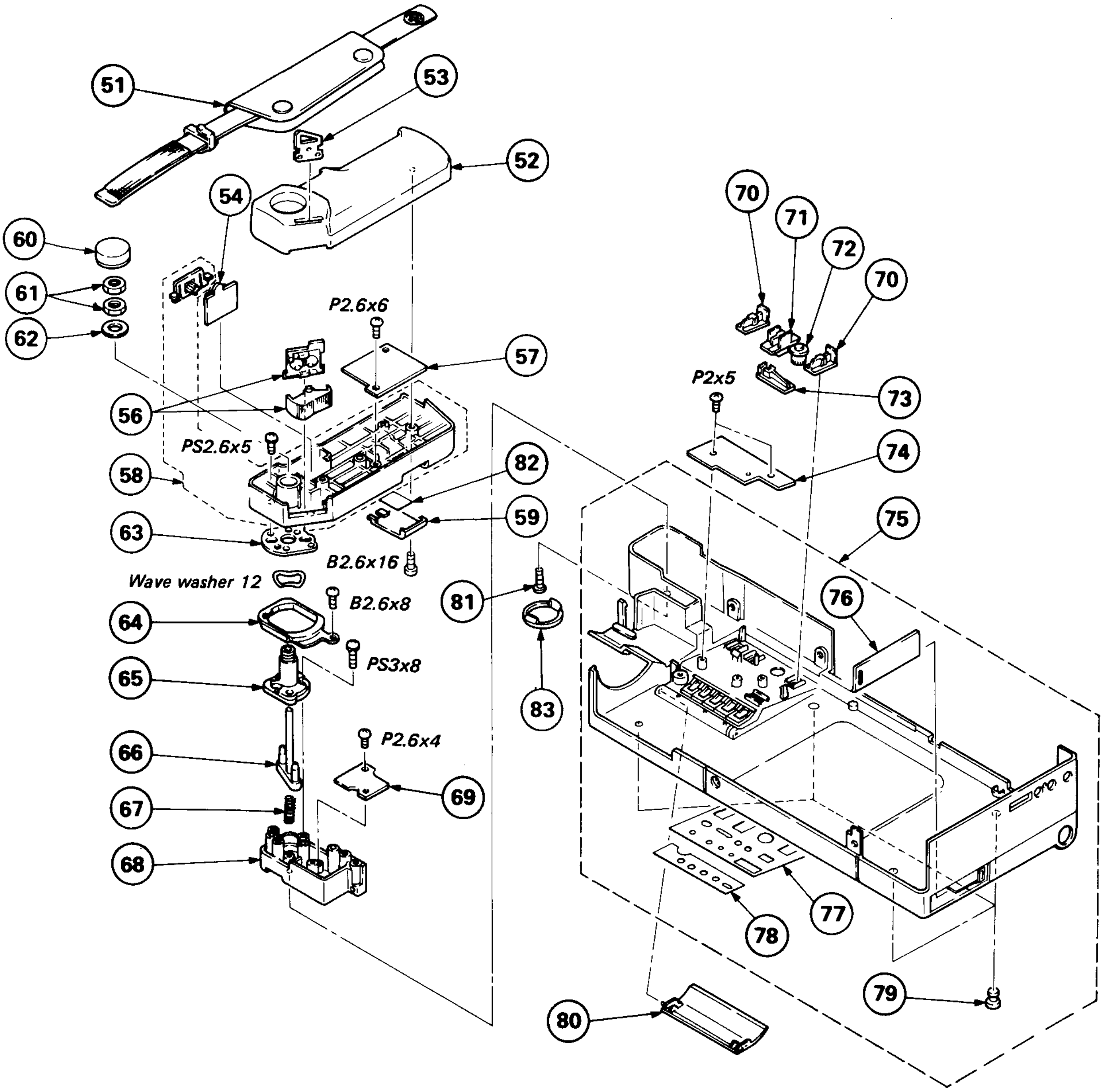
5-1. CABINET ASSEMBLY



1
2
B2.6x4
B2.6x8
4
8
B2.6x12
3
10
B2.6x6
9
7
BTP2.6x10
21
5
12
BTP2.6x10
K2.6x10
11
17
BTP2.6x10
22
6
P2x5
K2x5
B2.6x8
23
18
15
16
B2.6x4
13
19
BTP2.6x10
K2x3
B2.6x8
14
20
BTP2.6x10
BTP2.6x10
K2.6x10
BTP2.6x10

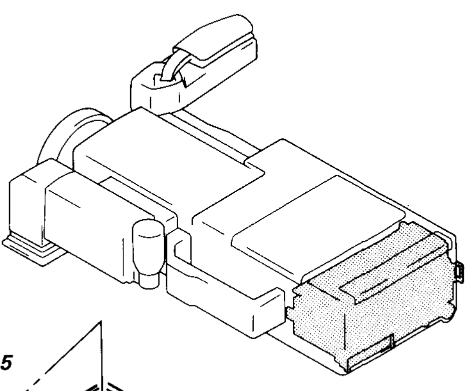
No.	Part No.	Description	Remark
1	*X-3686-894-1	LID ASSY, CASSETTE	2
2	3-712-679-01	SCREW (2X5), TAPPING	
3	X-3686-897-1	CABINET (L) ASSY	
4	*3-712-692-01	DOOR, FUNCTION	
5	3-531-576-31	RIVET, NILON	
6	3-712-585-01	HANDLE	
7	3-712-584-01	HANDLE (LOWER)	
8	*3-712-636-01	SUPPORT (A), HANDLE	
9	*3-712-637-01	SUPPORT (B), HANDLE	
10	3-712-638-01	PLATE, CLICK, BA	
11	3-712-583-01	LID, BATTERY	
12	3-712-640-01	LABEL, BATTERY PICK	
13	X-3686-869-1	CABINET (BOTTOM) ASSY	
14	*3-712-593-01	LABEL, MODEL NUMBER (FTZ object in AEP MODEL)	
	*3-713-541-01	LABEL, MODEL NUMBER (AEP, AUSTRALIAN, E, UK MODELS are beyond the object of the FTZ)	
15	3-713-539-01	KNOB, EJECT	
16	3-713-538-01	KNOB, EDIT	
17	3-713-540-01	KNOB, REC	
18	*3-712-647-01	SUPPORT, EVF ROTARY SHAFT	
19	3-712-619-01	CABINET (UPPER)	
20	3-712-676-01	PLATE, CLICK	
21	*3-713-543-01	PLATE (L), CONNECTION	
22	3-688-985-01	SHOE, ACCESSORY	
23	3-688-940-01	SPRING, LEAF	

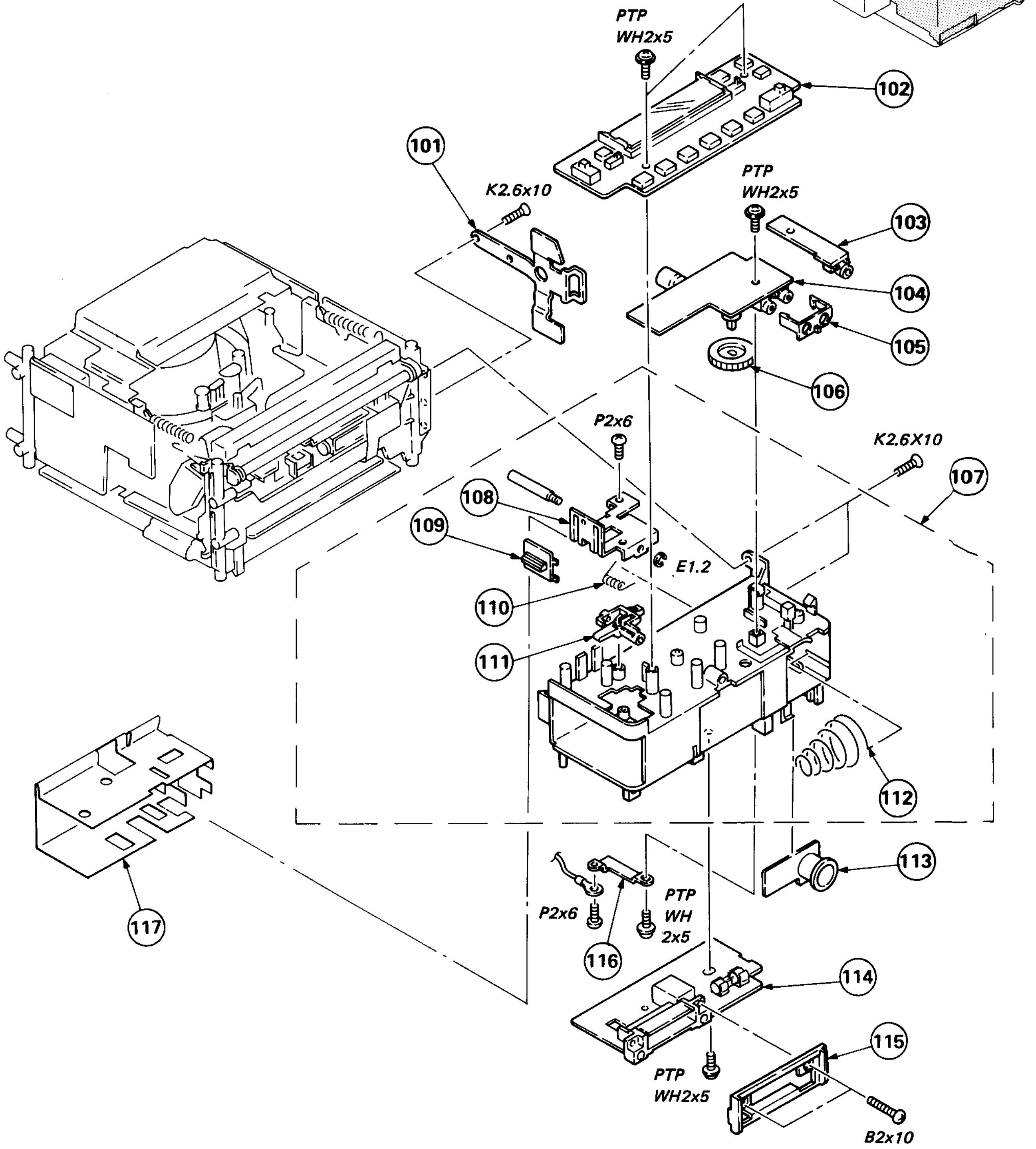
5-2. CABINET (R) AND GRIP ASSEMBLY


51
53
52
54
60
61
62
P2.6x6
57
56
PS2.6x5
58
82
59
63
B2.6x16
Wave washer 12
B2.6x8
81
64
PS3x8
65
83
P2.6x4
66
69
67
68
70
71
72
70
P2x5
73
74
75
76
77
78
79
80

No.	Part No.	Description	Remark
51	3-712-621-01	BELT, GRIP	
52	3-712-604-01	GRIP (2)	
53	3-712-598-01	BRACKET, BELT	
54	*1-620-279-11	GS-2 BOARD	
56	1-570-785-11	SWITCH, PUSH (ZOOM)	
57	*1-620-159-11	LI-1 BOARD	
58	X-3686-904-1	GRIP (1) SUB ASSY	
59	3-712-601-01	LID, BATTERY CASE	
60	3-712-644-01	BUTTON, RELEASE	
61	3-712-653-01	NUT (M8), TUBE	
62	3-712-650-01	COLLAR	
63	3-712-675-01	RATCHET	
64	*3-712-618-01	PLATE, ORNAMENTAL, CABINET (R)	
65	X-3686-879-1	HOLDER ASSY, RATCHET	
66	X-3686-858-1	RETAINER ASSY	
67	3-534-235-00	SPRING, COMPRESSION	
68	*3-712-602-01	REINFORCEMENT, CABINET (L)	
69	*1-620-160-11	ZS-2 BOARD	
70	3-712-567-01	KNOB, AF	
71	3-712-568-01	KNOB, WB	
72	3-713-537-01	KNOB, IRIS	
73	3-712-578-01	KNOB, CP	
74	*1-620-154-21	TI-8P BOARD	
75	X-3686-866-1	CABINET (RIGHT) ASSY	76-79
76	3-713-502-01	DOOR	
77	3-712-682-01	PLATE, ORNAMENTAL, CONTROL BLOCK	
78	3-712-683-01	PLATE, ORNAMENTAL, SET BLOCK	
79	3-688-931-11	FOOT, RUBBER	
80	3-713-506-01	DOOR, SET	
81	3-714-003-01	B 4x10	
82	*3-713-573-01	LABEL, BATTERY REPLACEMENT	
83	3-712-600-01	PLATE, ORNAMENTAL, GRIP	

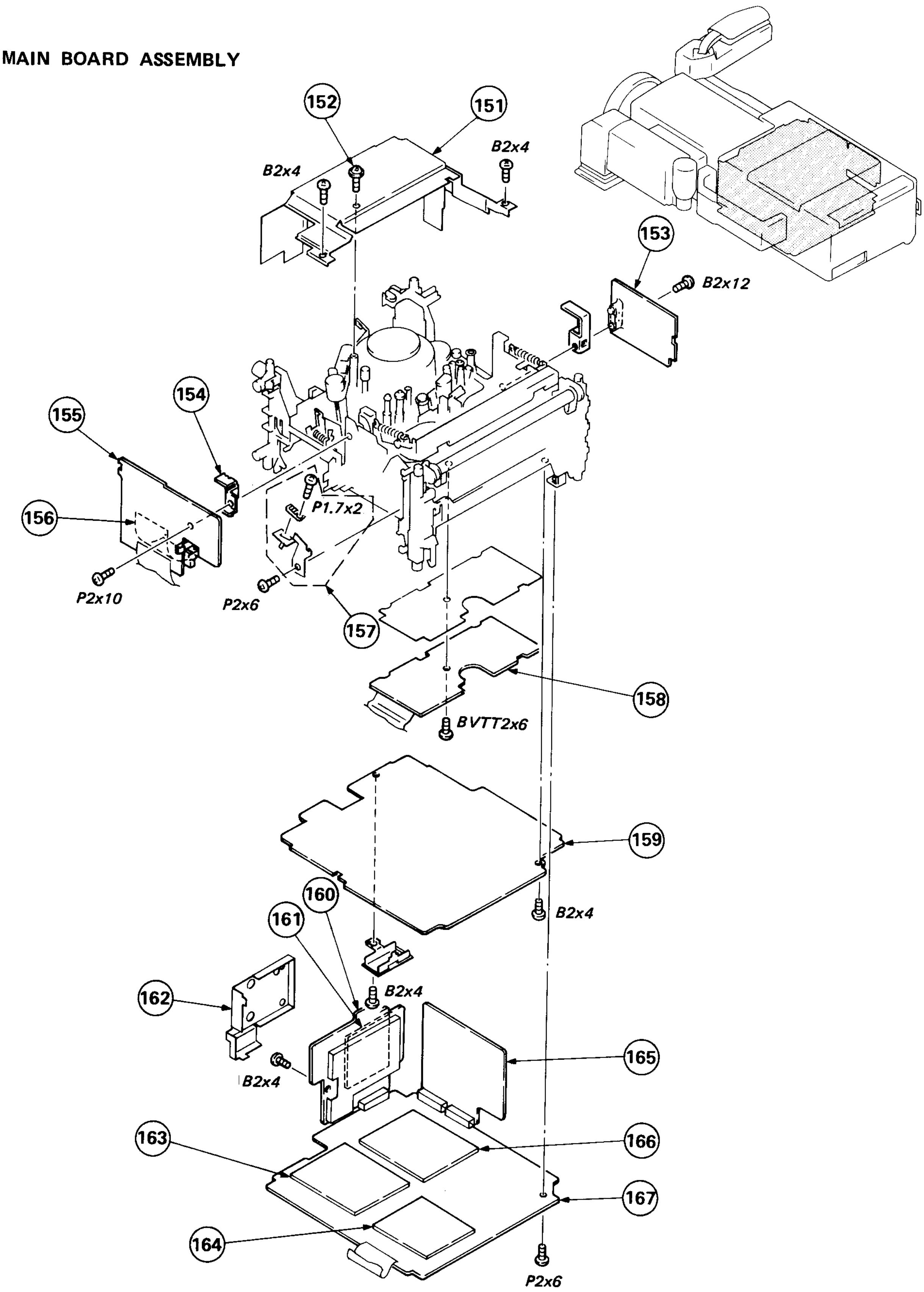
5-3. BATTERY HOLDER ASSEMBLY




PTP
WH2x5
102
101
K2.6x10
PTP
WH2x5
103
104
105
106
P2x6
K2.6X10
107
108
109
E1.2
110
111
112
117
113
P2x6
PTP
WH
2x5
116
114
115
PTP
WH2x5
B2x10

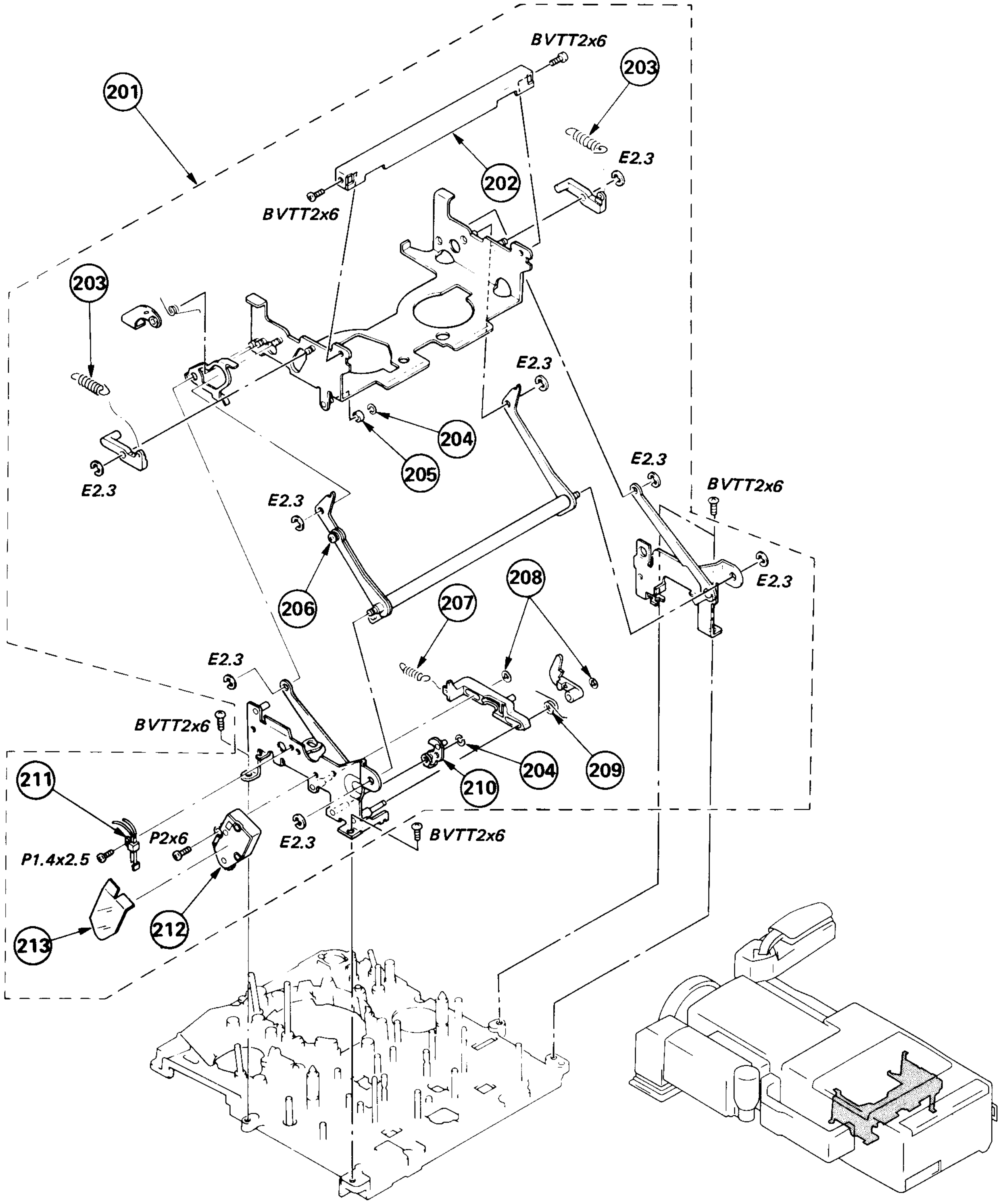
No.	Part No.	Description	Remark
101	3-712-606-01	PLATE (A), HOOK	
102	*A-7060-618-A	SK-12P BOARD, COMPLETE	
103	*1-620-158-11	EP-8 BOARD	
104	*A-7060-620-A	CC-6P BOARD, COMPLETE	
105	*3-712-608-01	MOLD, BLIND	
106	3-712-610-01	KNOB, SHARPNESS	
107	X-3686-865-1	HOLDER ASSY, BATTERY	108-112
108	3-712-581-01	BRACKET, RELEASE BUTTON	
109	3-712-614-01	BUTTON, LOCK RELEASE	
110	3-713-520-01	SPRING	
111	3-712-580-01	CLAW, BATTERY LOCK	
112	3-686-775-01	SPRING	
113	*1-620-155-21	RJ-2P BOARD	
114	*A-7050-619-A	SC-6P BOARD, COMPLETE	
115	*3-713-507-01	COVER	
116	*3-712-611-01	PLATE, GROUND, L	
117	*3-713-521-01	COVER, SHIELD	

5-4. MAIN BOARD ASSEMBLY


152
151
B2x4
B2x4
153
B2x12
155
154
156
P1.7x2
P2x10
P2x6
157
158
BVTT2x6
159
160
161
B2x4
162
B2x4
B2x4
165
163
166
167
164
P2x6

No.	Part No.	Description	Remark
151	*3-712-529-01	PLATE, SHIELD, MD	
152	3-703-502-31	SCREW	
153	*A-7060-617-A	TS-55P BOARD, COMPLETE	
154	*X-3686-837-1	HOLDER ASSY, END	
155	*A-7060-494-A	DR-36P BOARD, COMPLETE	156
156	A-7070-249-A	FP-20 BOARD, COMPLETE	
157	1-807-744-11	SENSOR (DEW)	
158	*A-7060-486-A	RS-18P BOARD, COMPLETE	
159	*A-7060-616-A	SS-64P BOARD, COMPLETE (AEP, AUSTRALIAN, E MODEL)	
159	*A-7060-702-A	SS-64P BOARD, COMPLETE (UK MODEL)	
160	*A-7060-491-A	RP-40 BOARD, COMPLETE	161
161	A-7068-037-A	RP-34P HIC BOARD, COMPLETE	
162	*X-3686-845-1	LID ASSY, UPPER, RP SHIELD	
163	*A-7068-034-A	VY-9 HIC BOARD, COMPLETE	
164	A-7068-035-A	VD-6 HIC BOARD, COMPLETE	
165	*A-7060-633-A	AU-25 BOARD, COMPLETE	
166	A-7068-036-A	VC-11 HIC BOARD, COMPLETE	
167	*A-7060-615-A	VI-22 BOARD, COMPLETE	163, 164, 166

5-5. CASSETTE COMPARTMENT ASSEMBLY


BVTT2x6
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201
202
E2.3
BVTT2x6
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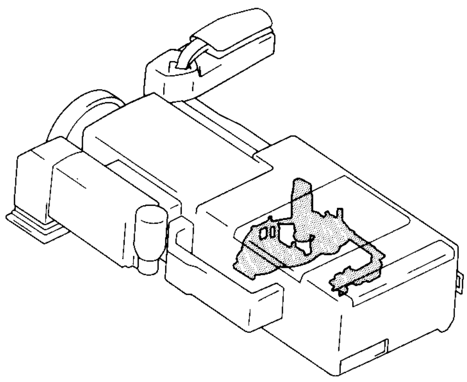
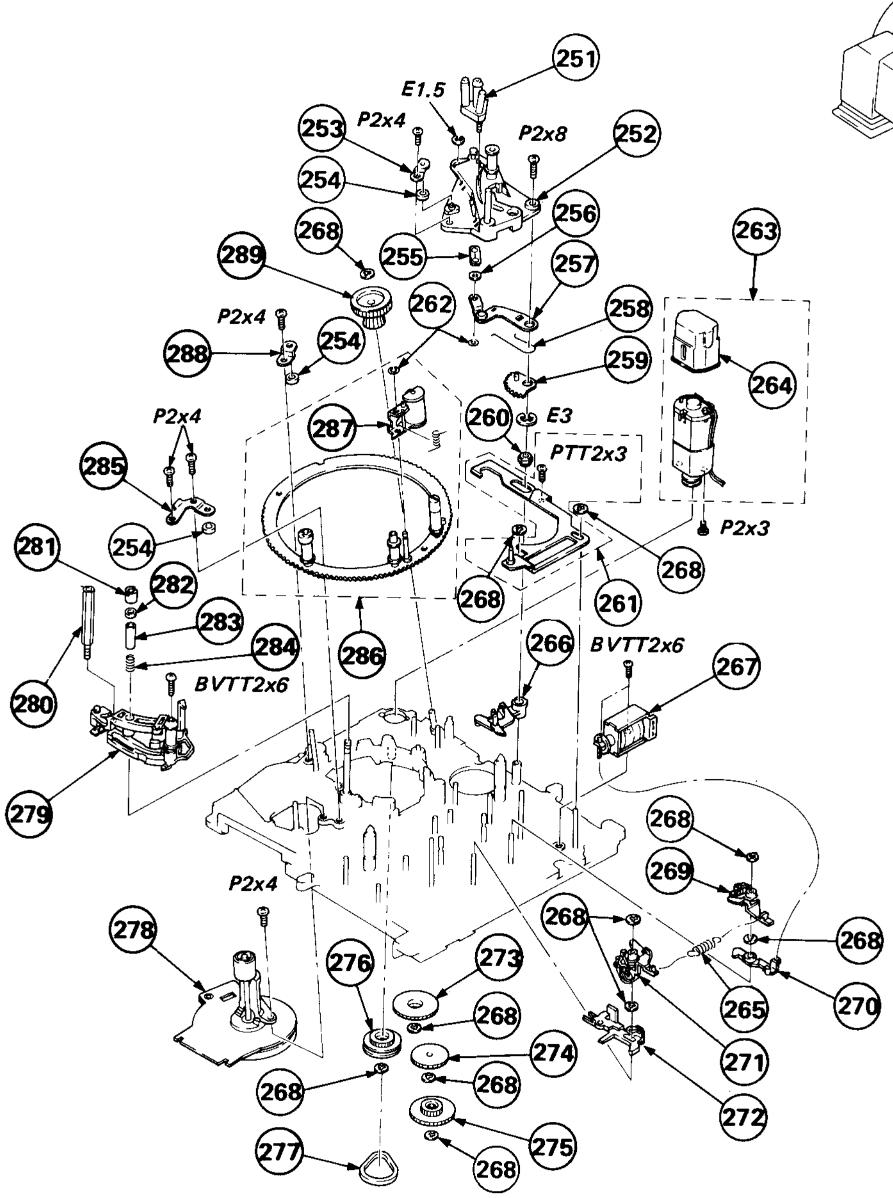
E2.3
E2.3
204
205
E2.3
BVTT2x6
E2.3
E2.3
206
208
207
E2.3
BVTT2x6
211
204
209
210
P2x6
E2.3
BVTT2x6
P1.4x2.5
213
212

No.	Part No.	Description	Remark
201	A-7040-005-A	CASSETTE COMPARTMENT ASSY	202-213
202	3-686-718-01	REINFORCEMENT	
203	3-686-883-01	SPRING, TENSION	
204	3-578-265-11	WASHER, STOPPER	
205	*3-686-693-01	ROLLER, LOCK	
206	3-672-561-00	+PSW 2X4	
207	3-696-047-01	SPRING, TENSION	
208	3-669-465-00	WASHER (1.5), STOPPER	
209	3-686-694-01	SPRING, TORSION	
210	*X-3686-541-1	CLAW ASSY, LOCK	
211	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK) S901	
212	*3-681-528-00	DAMPER	
213	*3-686-937-01	INSULATOR, DAMPER	

5-6. CHASSIS ASSEMBLY 1

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E1.5
253
P2x4
P2x8
252
254
268
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289
255
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263
262
P2x4
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P2x4
287
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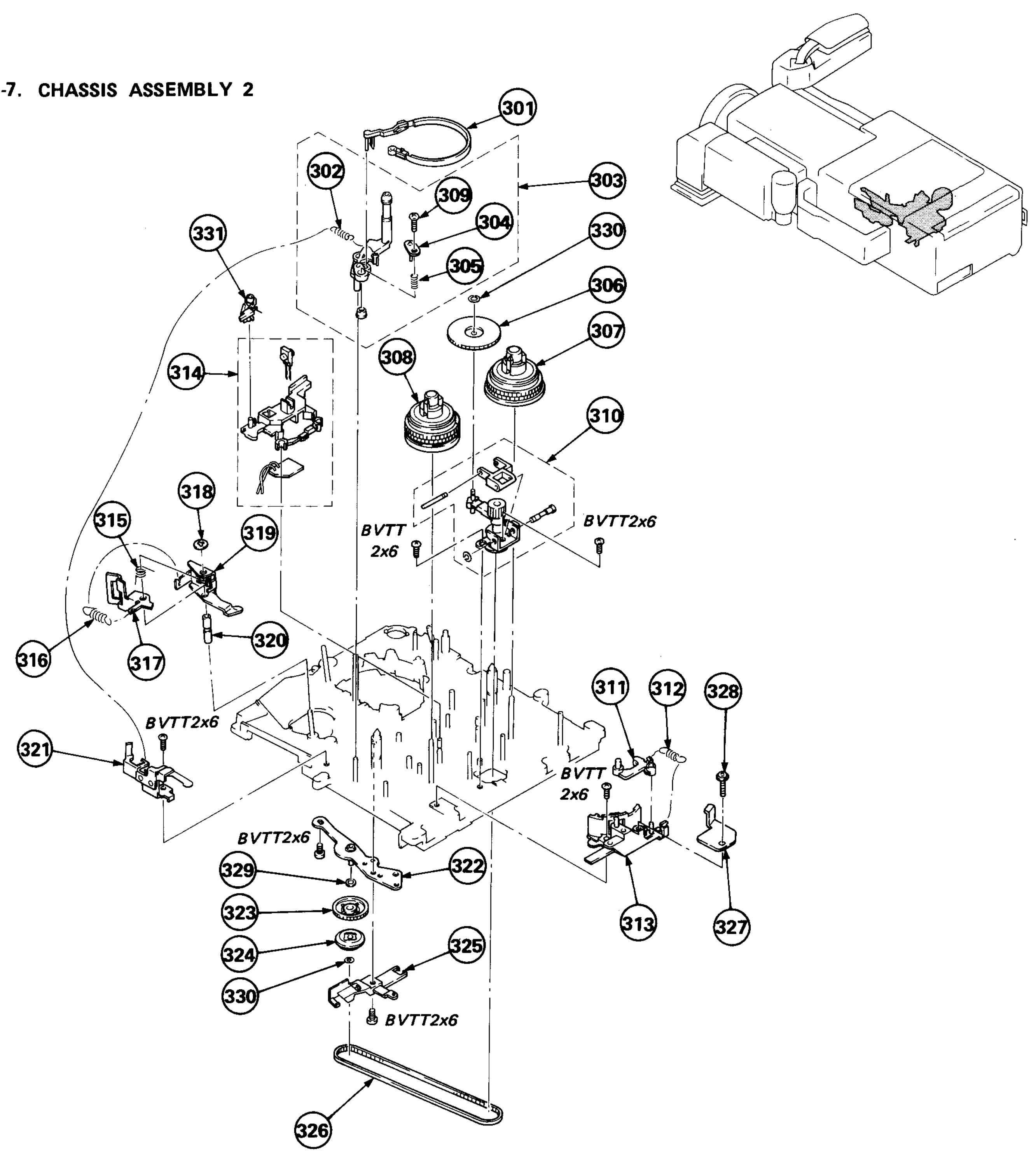
E3
PTT2x3
285
P2x3
281
254
282
268
268
261
283
284
286
266
BVTT2x6
267
280
BVTT2x6
279
268
269
P2x4
278
268
268
276
273
265
270
268
274
271
268
268
272
277
275
268

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
251	X-3686-502-1	BASE ASSY, GUIDE	
252	X-3686-577-1	CHASSIS ASSY, GUIDE, SLANT	
253	*3-686-503-01	RETAINER, ROLLER	
254	3-697-538-01	ROLLER, RING	
255	3-686-663-01	WASHER, STOPPER, 2 GANG	
256	3-701-436-21	WASHER, POLYEHTHYLENE	
257	X-3686-537-1	ARM ASSY	
258	3-686-701-01	SPRING	
259	3-699-509-01	GEAR, SECTOR	
260	3-686-537-01	RETAINER, LOCK SLODER	
261	A-7040-072-A	SLIDER ASSY, LOCK	
262	3-315-384-31	WASHER, STOPPER	
263	A-7040-031-A	MOTOR ASSY, L (LOADING) M901	264
264	*3-686-757-01	CAP, SHIELD, L MOTOR	
265	3-686-882-01	SPRING, TENSION	
266	*3-686-636-01	ARM, T.S RELEASE	
267	⚠ 1-454-377-21	SOLENOID, PLUNGER PM901 (BRAKE)	
268	3-669-465-00	WASHER (1.5), STOPPER	
269	X-3686-574-1	BRAKE ASSY, MAIN, TAKE-UP	
270	*3-686-635-01	ARM, P	
271	X-3686-573-1	BRAKE ASSY, MAIN, SUPPLY	
272	*3-686-629-01	SLIDER,SELECTION,UPPER & LOWER	
273	3-686-508-01	GEAR, NO.2	
274	3-686-545-01	GEAR, NO.3	
275	3-686-544-01	GEAR, NO.4	
276	X-3686-514-1	GEAR ASSY, NO.1	
277	3-686-546-01	BELT, L- MOTOR	
278	8-835-196-01	MOTOR, DC BHF-2802A (CAPSTAN) M902	
279	A-7040-054-A	GUIDE (P) ASSY, ENTRANCE	
280	3-686-561-01	SCREW, DRUM GUARD	
281	3-686-724-01	NUT, GUIDE	
282	*3-686-894-01	FLANGE, #3 #4 GUIDE	
283	3-686-912-01	GUIDE, #3 #4	
284	3-699-609-01	SPRING, COMPRESSION	
285	*3-686-675-01	STOPPER, RING	
286	A-7040-007-A	RING ASSY, LOADING	262, 287
287	X-3686-576-1	ARM ASSY, PINCH ROLLER	
288	*3-686-911-01	PLATE, TOP, ROLLER	
289	3-697-518-01	GEAR, NO.10	

5-7. CHASSIS ASSEMBLY 2


301
302
303
309
304
331
330
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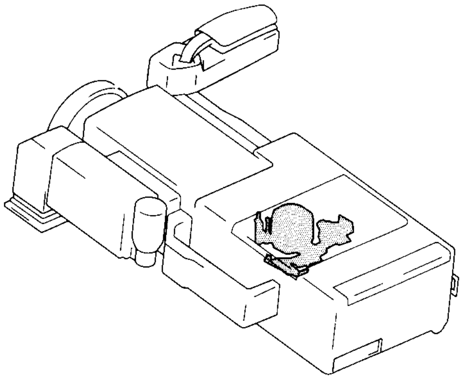
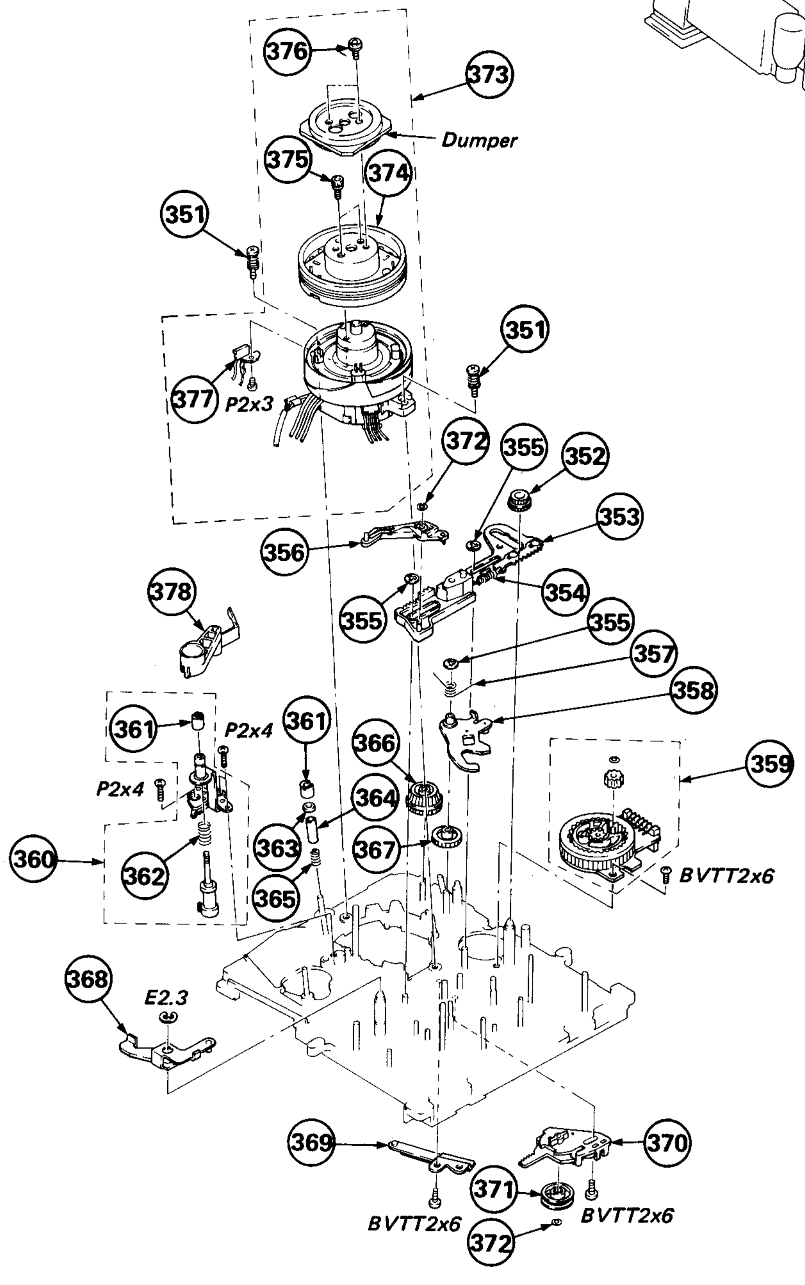
306
307
308
314
310
318
315
319
BVTT 2x6
BVTT2x6
320
316
317
311
312
328
BVTT2x6
321
BVTT 2x6
BVTT2x6
322
329
313
327
323
324
325
330
BVTT2x6
326

No.	Part No.	Description	Remark
301	X-3686-531-1	BAND ASSY, TENSION REGULATOR	
302	3-699-519-01	SPRING, TENSION	
303	A-7040-059-A	ARM ASSY, TENSION REGULATOR 302, 304, 305, 309	
304	*X-3686-523-1	PLATE ASSY, TENSION REGULATOR	
305	3-699-609-01	SPRING, COMPRESSION	
306	X-3686-763-1	GEAR (B) ASSY, DRIVING	
307	X-3686-572-2	TABLE ASSY, REEL, TAKE-UP	
308	X-3686-571-2	TABLE ASSY, REEL, SUPPLY	
309	3-697-546-01	SCREW (+-M2X6), SPECIAL	
310	X-3686-750-1	DRIVING COMPLETE ASSY	
311	*3-686-637-01	BRAKE (S), SOFT	
312	3-696-082-01	SPRING, TENSION	
313	*3-686-760-01	GUIDE, BAND	
314	*A-7070-024-A	LD-1 BOARD, COMPLETE	
315	3-686-568-01	SPRING, TORSION	
316	3-686-885-01	SPRING, TENSION	
317	*3-686-641-01	ARM, PINCH PRESS	
318	3-669-465-00	WASHER (1.5), STOPPER	
319	*3-686-660-01	ARM, PINCH LIMITER	
320	*3-686-567-01	SLEEVE, PINCH PRESS	
321	*X-3686-525-1	HOOK ASSY, SPRING	
322	*X-3686-529-1	BASE ASSY, CHANGE GEAR	
323	X-3686-520-1	GEAR ASSY, CHANGE	
324	*3-686-596-01	FLANGE, GEAR	
325	3-712-406-01	CLAMP, WIRE	
326	3-686-646-01	BELT, TIMIMG	
327	*3-686-991-01	STOPPER, REEL TABLE	
328	3-669-480-11	+ PTPWH 2	
329	3-701-436-11	WASHER, 1.6	
330	3-315-384-31	WASHER, STOPPER	
331	X-3686-590-1	BRAKE ASSY, REV	

5-8. CHASSIS ASSEMBLY 3




376
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Dumper
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P2x3
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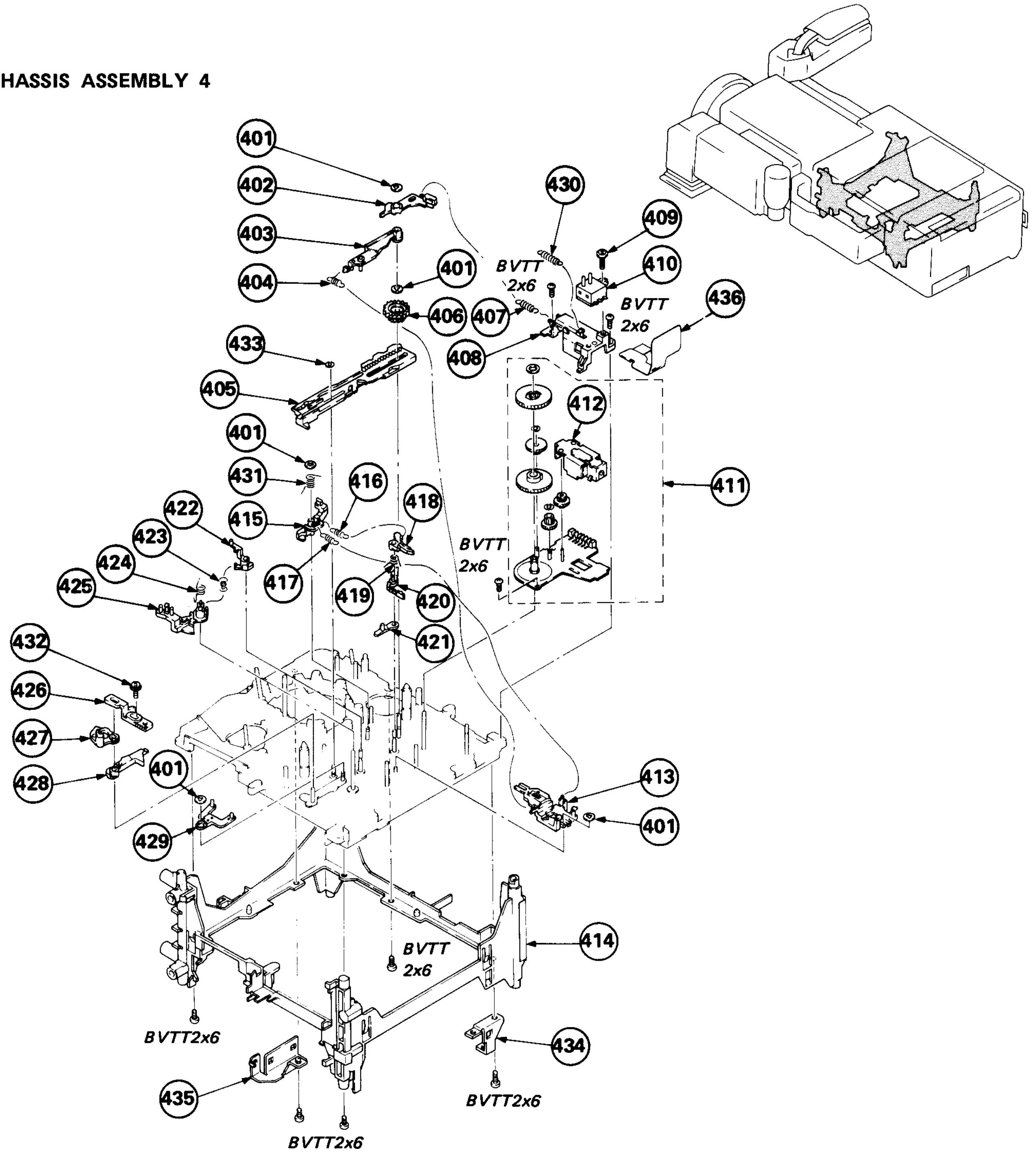
358
361
P2x4
361
366
359
P2x4
364
363
367
360
362
365
BVTT2x6
368
E2.3
369
370
371
BVTT2x6
BVTT2x6
372

No.	Part No.	Description	Remark
351	X-3686-569-1	SCREW ASSY, FITTING	
352	3-686-702-01	GEAR, DRIVING, GUIDE, SLANT	
353	*X-3686-548-2	SLIDER SUB ASSY, L	
354	3-686-886-01	SPRING, TENSION	
355	3-669-465-00	WASHER (1.5), STOPPER	
356	*X-3686-518-1	ARM ASSY	
357	3-686-540-01	SPRING, TORSION	
358	X-3686-579-1	CHANGE ASSY, DRIVE	
359	X-3712-403-1	L-SW ASSY	
360	A-7040-053-A	GUIDE BLOCK COMPLETE ASSY, #5	361, 362
361	3-686-724-01	NUT, GUIDE	
362	3-686-889-01	SPRING, COMPRESSION	
363	*3-686-894-01	FLANGE, #3 #4 GUIDE	
364	3-686-912-01	GUIDE, #3 #4	
365	3-699-609-01	SPRING, COMPRESSION	
366	3-686-539-01	GEAR, NO.9	
367	3-686-535-01	GEAR, NO.8	
368	*X-3686-509-1	LEVER ASSY, PINCH PRESS	
369	1-535-535-11	TERMINAL, SHAFT GROUND	
370	X-3686-521-1	BASE ASSY, IDLER	
371	X-3686-522-1	IDLER ASSY	
372	3-315-384-31	WASHER, STOPPER	
373	A-7048-040-A	DRUM ASSY (DVH-03D-R)	374-377
374	A-7049-005-A	DRUM ASSY, ROTARY UPPER (DVR-03-R)	
375	3-686-403-01	SCREW (2x5), BOLT WASHER	
376	3-686-422-01	WASHER (2x2.7), BOLT, HOLE	
377	1-806-975-11	SENSOR, DEW CONDENSATION	
378	*3-688-917-01	STOPPER, TAPE	
380	3-686-561-01	SCREW, DRUM GUARD	

5-9. CHASSIS ASSEMBLY 4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401
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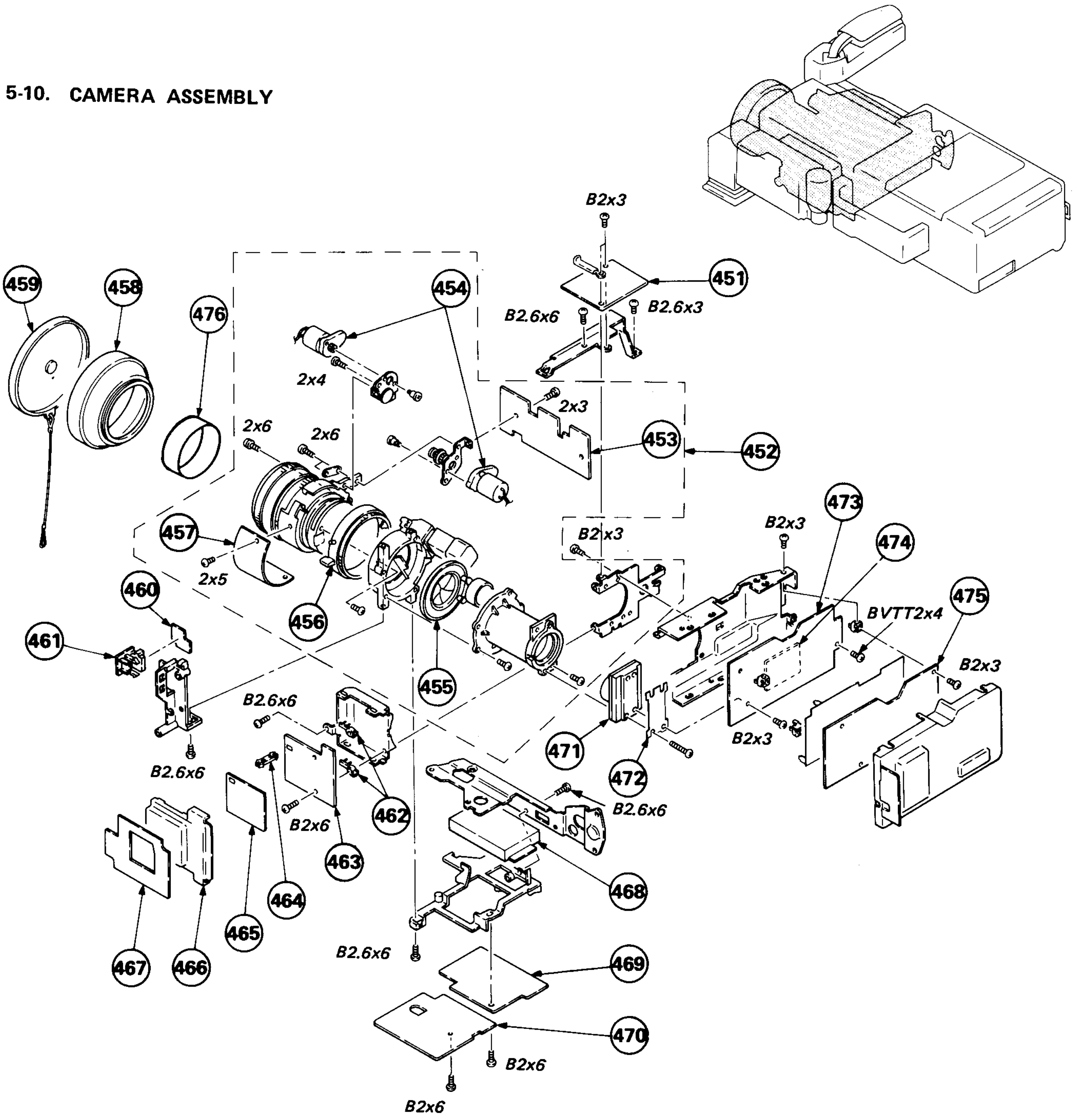
415
423
424
417
BVTT
2x6
425
419
420
421
432
426
427
428
401
429
413
401
414
BVTT
2x6
BVTT2x6
434
435
BVTT2x6
BVTT2x6

No.	Part No.	Description	Remark
401	3-669-465-00	WASHER (1.5), STOPPER	
402	X-3686-777-1	BRAKE ASSY, T.S	
403	*X-3686-528-1	ARM ASSY, B RELEASE	
404	3-686-903-01	SPRING, TENSION	
405	*3-686-657-08	SLIDER, M	
406	3-686-909-01	GEAR, MODE OUTPUT	
407	3-699-649-01	SPRING, TENSION	
408	*3-699-556-01	COVER, CONTROL MOTOR	
409	3-669-480-11	+ PTPWH 2	
410	1-554-942-11	SWITCH, PUSH (RECOG) S902	
411	A-7090-029-A	M-SW ASSY	412
412	8-835-110-01	MOTOR, DC (DNR-5301A) (CONTROL) M903	
413	*3-686-656-01	SLIDER, B RELEASE	
414	X-3686-848-1	FRAME ASSY, MOLD	434, 435
415	*3-686-634-01	ARM, RL	
416	3-686-906-01	SPRING, TENSION	
417	3-686-904-01	SPRING, TENSION	
418	X-3686-510-1	BRAKE ASSY, REW	
419	3-686-617-01	SPRING	
420	*3-686-638-01	ARM, RVS	
421	*3-686-580-01	ARM, SET UP	
422	3-686-996-01	BRAKE (S), HARD	
423	3-686-905-02	SPRING, TENSION	
424	3-686-603-04	SPRING	
425	*3-686-644-01	ARM, BAND	
426	*3-686-642-01	PLATE, ADJUSTMENT, BAND	
427	*3-686-755-01	DISK, EJECT	
428	*3-686-643-01	ARM, MODE	
429	*X-3686-530-1	ARM (A) ASSY, SELECTION	
430	3-699-650-01	SPRING, TENSION	
431	3-686-579-01	SPRING	
432	3-686-528-01	SCREW (2X6), +	
433	3-315-384-31	WASHER, STOPPER	
434	3-712-507-01	SHEET METAL, VI FITTING	
435	3-712-527-01	BRACKET, SS	
436	1-619-921-11	FP-19 BOARD	

5-10. CAMERA ASSEMBLY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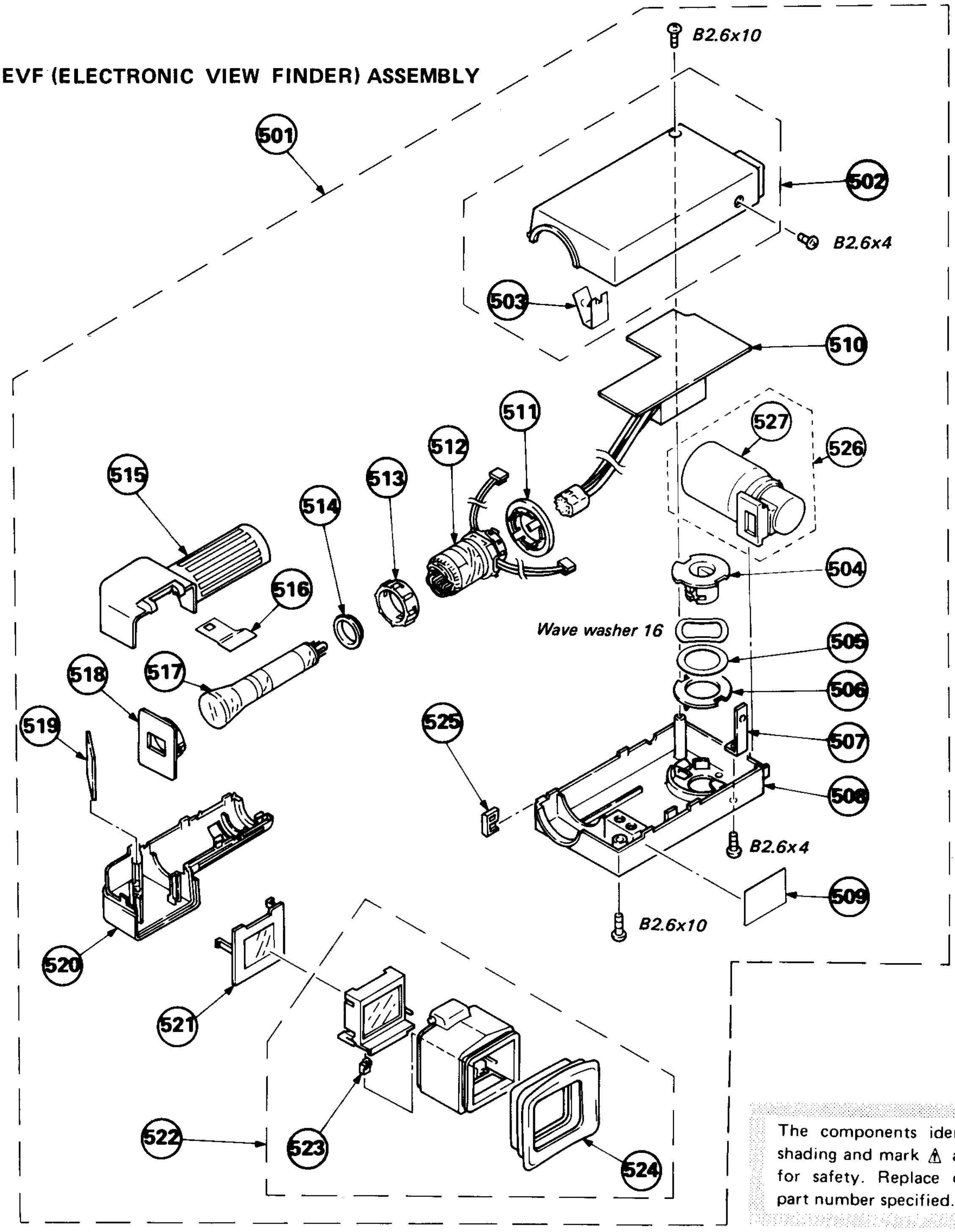
462
B2x6
463
468
464
465
467
466
B2.6x6
469
470
B2x6
B2x6

No.	Part No.	Description	Remark
451	*A-7060-626-A	AI-1P BOARD, COMPLETE	
452	1-547-213-11	LENS, ZOOM (VCL-1206YG)	453-457
453	*A-7060-604-A	AF-23 BOARD, COMPLETE	
454	8-835-127-01	MOTOR, DC (DNR-6300D)	
455	3-707-289-01	IRIS UNIT	
456	3-707-290-01	RING ASSY, ZOOM	
457	3-707-288-01	RING, ORNAMENTAL	
458	3-706-855-00	HOOD	
459	3-712-617-01	CAP, HOOD	
460	*1-620-145-21	AS-13P BOARD	
461	3-712-627-02	HOLDER, SENSOR	
462	*3-712-571-01	CALLOR, AW	
463	*A-7060-624-A	AW-3P BOARD, COMPLETE	
464	3-712-582-01	BRACKET, AW	
465	*A-7060-625-A	AT-5P BOARD, COMPLETE	
466	*X-3686-878-1	PLATE (A) ASSY, SHIELD	
467	*A-7060-632-A	EM-1P BOARD, COMPLETE	
468	1-464-704-11	CONVERTER UNIT, DC-DC (S)	
469	*A-7060-628-A	CG-1P BOARD, COMPLETE	
470	*A-7060-627-A	FC-10P BOARD, COMPLETE	
471	8-750-010-35	IU021-K-AA	
472	*3-690-235-01	SHEET, INSULATING, CCD	
473	*A-7060-622-A	CP-18P BOARD, COMPLETE	474
474	A-7068-049-A	DT-61P HIC BOARD, COMPLETE	
475	*A-7060-621-A	ME-4P BOARD, COMPLETE	
476	A-7002-184-A	RING ASSY, HOOD	

5-11. EVF (ELECTRONIC VIEW FINDER) ASSEMBLY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B2.6x10
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B2.6x4
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510
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512
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514
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516
527
526
504
Wave washer 16
505
506
517
518
519
525
507
508
B2.6x4
509
B2.6x10
520
521
522
523
524

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
501	A-7019-040-A	EVF ASSY (AEP, AUSTRALIAN, E MODEL)	502-526
	A-7019-045-A	EVF ASSY (UK MODEL)	502-526
502	X-3686-874-1	CASE ASSY, UPPER, EVF	503
503	X-3686-873-1	SPRING ASSY	
504	3-712-664-01	SHAFT, EVF ROTARY	
505	3-712-655-01	SLIDER, EVF	
506	X-3686-871-1	HOLDER ASSY, CLICK	
507	3-713-558-01	BRACKET	
508	3-712-672-01	CASE, EVF (LOWER)	
509	3-663-807-00	LABEL, CAUTION, EVF	
510	*A-7060-631-A	VF-7P BOARD, COMPLETE (AEP, AUSTRALIAN, E MODEL)	
	*A-7060-748-A	VF-7P BOARD, COMPLETE (UK MODEL)	
511	3-712-645-01	RING, CRT HOLDER	
512	**⚠ 1-451-296-11**	**DEELECTION YOKE (BLACK & WHITE)**	**L 901**
513	*3-712-658-01	RETAINER, CRT	
514	*3-712-660-01	RING, RUBBER	
515	3-712-670-01	HOLDER (UPPER), CRT	
516	3-712-657-01	SPRING, LEAF	
517	**⚠1-546-061-11**	**CATHODE-RAY TUBE, B/W (M01JPG5WB)**	**V901**
518	*3-712-659-01	COVER, CRT	
519	3-712-656-01	MIRROR, REFLECTION	
520	X-3686-872-1	HOLDER (LOWER) ASSY, CRT	
521	X-3686-859-1	HOLDER (2) ASSY, LENS	
522	A-7090-503-A	HOLDER ASSY, LENS	523, 524
523	3-712-566-01	KNOB, ADJUSTMENT	
524	3-696-016-11	EYE COP	
525	3-712-667-01	PLATE, ORNAMENTAL	
526	8-814-225-90	MICROPHONE C-2012	527
527	X-2536-705-1	SCREEN ASSY WINDOW	

5-12. HARDWARE LIST

SCREW

7-621-255-10	SCREW +P 2x3
7-621-255-20	SCREW +P 2x4
7-621-255-45	SCREW +P 2x6
7-621-255-50	SCREW +P 2x8
7-621-255-65	SCREW +P 2x10
7-621-256-05	SCREW +P 2x16
7-621-259-25	SCREW +P 2.6x4
7-621-555-10	SCREW +K 2x3
7-621-772-08	SCREW +B 2x3
7-621-772-18	SCREW +B 2x4
7-621-772-38	SCREW +B 2x6
7-621-772-50	SCREW +B 2x10
7-621-772-68	SCREW +B 2x12
7-621-775-08	SCREW +B 2.6x3
7-621-775-10	SCREW +B 2.6x4
7-621-775-40	SCREW +B 2.6x8
7-628-254-05	SCREW +PS2.6x5
7-682-561-09	SCREW +B 4x8
7-685-103-14	SCREW +P 2x5 TYPE2 NON-SLIT
7-685-104-14	SCREW +P 2x6 TYPE2 NON-SLIT

WASHER

7-623-710-67	WASHER 12, WABE TYPE
7-623-710-87	WASHER 16, WABE TYPE

RING

7-624-101-01	STOP RING 1.2, TYPE-E
7-624-102-04	STOP RING 1.5, TYPE-E
7-624-105-04	STOP RING 2.3, TYPE-E
7-624-106-04	STOP RING 3.0, TYPE-E

PRECISION-SCREW

7-627-552-27	SCREW, PRECISION +P 1.7x2
7-627-553-48	SCREW, PRECISION +P 2x4
7-627-850-18	SCREW, PRECISION +P 1.4x2.5

TAPPING-SCREW

7-685-233-19	SCREW +KTP 2.6x10 TYPE2 NON-SLIT
7-685-133-14	SCREW +BTP 2.6x6 TYPE2 NON-SLIT
7-685-134-19	SCREW +BTP 2.6x8 TYPE2 NON-SLIT
7-685-535-14	SCREW +BTP 2.6x10 TYPE2 NON-SLIT
7-685-535-19	SCREW +BTP 2.6x10 TYPE2 NON-SLIT
7-685-780-04	SCREW +PTT 2x3 (S)
7-685-781-04	SCREW +BVTT 2x4 (S)
7-685-853-01	SCREW +BVTT 2x6 (S)

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS

- MF : μF, PF : μμF

COILS

- MMH : mH, UH : μH

Ref.No	Part No.	Description		Remark
	*A-7060-615-A	VI-22 BOARD, COMPLETE ***********************		
	*A-7068-034-A	VY-9 BOARD, COMPLETE		
	A-7068-035-A	VD-6 BOARD, COMPLETE		
	A-7068-036-A	VC-11 BOARD, COMPLETE		
	2-279-715-01	RIVET, NYLON		
		CAPACITOR		
C101	1-163-090-00	CERAMIC CHIP 7PF	0.25PF	50V
C102	1-163-108-00	CERAMIC CHIP 43PF	5%	50V
C103	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C104	1-124-222-00	ELECT 22MF	20%	6.3V
C105	1-124-222-00	ELECT 22MF	20%	6.3V
C106	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C107	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C109	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C110	1-124-224-00	ELECT 47MF	20%	6.3V
C115	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C121	1-163-126-00	CERAMIC CHIP 240PF	5%	50V
C122	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C123	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C125	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C126	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C127	1-163-124-00	CERAMIC CHIP 200PF	5%	50V
C129	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C130	1-124-224-00	ELECT 47MF	20%	6.3V
C131	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C135	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C160	1-163-088-00	CERAMIC CHIP 5PF	0.25PF	50V
C180	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C201	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C203	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C204	1-163-108-00	CERAMIC CHIP 43PF	5%	50V
C205	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C207	1-124-442-00	ELECT 330MF	20%	6.3V
C208	1-124-224-00	ELECT 47MF	20%	6.3V
C214	1-124-224-00	ELECT 47MF	20%	6.3V
C215	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C216	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	50V
C217	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C218	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C219	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C220	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C222	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C223	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C224	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C225	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C226	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C227	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C228	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C229	1-163-127-00	CERAMIC CHIP 270PF	5%	50V
C230	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C231	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	50V
C232	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C233	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C234	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C235	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C236	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C237	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C238	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C239	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C240	1-124-224-00	ELECT 47MF	20%	6.3V
C241	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C243	1-124-587-11	ELECT 220MF	20%	6.3V
C250	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
		CONNECTOR		
CN201	*1-564-012-00	PIN, CONNECTOR 2P		
CN206	*1-564-014-00	PIN, CONNECTOR 4P		
CN207	*1-564-013-00	PIN, CONNECTOR 3P		
CN208	*1-564-014-00	PIN, CONNECTOR 4P		
CN209	*1-564-013-00	PIN, CONNECTOR 3P		
W202	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P		
W204	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P		
W205	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P		
		DIODE		
D201	8-719-101-23	DIODE 1SS123		
D202	8-719-101-23	DIODE 1SS123		
		DELAY LINE		
DL201	1-415-517-21	DELAY LINE, DUAL 1H-2H		
		CONVERTER		
DR201	1-464-689-12	CONVERTER, DC-DC		
		FILTER		
FL201	1-235-632-11	BPF (3.7MHZ)		
FL202	1-235-633-11	BPF (5.17MHZ)		
FL203	1-409-394-11	TRAP, CHROMA EMPHASIS		
		IC		
IC201	8-757-991-00	IC CX-7991		
IC202	8-759-200-60	IC TA7060AP		
		COIL		
L101	1-410-627-11	COIL, CHOKE 100UH		
L102	1-410-377-11	INDUCTOR CHIP 4.7UH		
L121	1-408-970-21	MICRO INDUCTOR 10UH		
L201	1-408-969-21	MICRO INDUCTOR 8.2UH		
L202	1-408-982-21	MICRO INDUCTOR 100UH		
L203	1-408-982-21	MICRO INDUCTOR 100UH		
L204	1-408-970-21	MICRO INDUCTOR 10UH		
L205	1-408-958-21	MICRO INDUCTOR 1UH		

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Ref.No	Part No.	Description	Remark
L206	1-408-958-21	MICRO INDUCTOR 1UH	
L207	1-408-982-21	MICRO INDUCTOR 100UH	
L208	1-408-982-21	MICRO INDUCTOR 100UH	
L209	1-408-976-21	MICRO INDUCTOR 33UH	
L210	1-410-393-11	INDUCTOR CHIP 100UH	
L211	1-407-172-XX	MICRO INDUCTOR 180UH	
L212	1-410-167-31	INDUCTOR CHIP 820UH	
L213	1-408-795-21	INDUCTOR CHIP 330UH	
L220	1-408-969-21	MICRO INDUCTOR 8.2UH	

VARIABLE COIL

Ref.No	Part No.	Description	Remark
LV201	1-404-594-11	COIL, VARIABLE	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q201	8-729-901-03	TRANSISTOR DTC144WK	
Q202	8-729-901-03	TRANSISTOR DTC144WK	
Q209	8-729-100-66	TRANSISTOR 2SC1623	
Q210	8-729-312-22	TRANSISTOR 2SA1122	
Q211	8-729-100-66	TRANSISTOR 2SC1623	
Q212	8-729-100-66	TRANSISTOR 2SC1623	
Q213	8-729-900-99	TRANSISTOR DTA144WK	
Q220	8-729-312-22	TRANSISTOR 2SA1122	
Q221	8-729-100-66	TRANSISTOR 2SC1623	
Q222	8-729-900-99	TRANSISTOR DTA144WK	
Q223	8-729-100-66	TRANSISTOR 2SC1623	
Q224	8-729-100-66	TRANSISTOR 2SC1623	
Q225	8-729-100-66	TRANSISTOR 2SC1623	
Q226	8-729-100-66	TRANSISTOR 2SC1623	
Q227	8-729-100-66	TRANSISTOR 2SC1623	
Q228	8-729-100-66	TRANSISTOR 2SC1623	
Q229	8-729-900-99	TRANSISTOR DTA144WK	
Q230	8-729-100-66	TRANSISTOR 2SC1623	
Q240	8-729-900-61	TRANSISTOR DTA114ES	
Q241	8-729-901-03	TRANSISTOR DTC144WK	
Q242	8-729-901-03	TRANSISTOR DTC144WK	
Q243	8-729-901-03	TRANSISTOR DTC144WK	
Q244	8-729-901-03	TRANSISTOR DTC144WK	
Q245	8-729-900-99	TRANSISTOR DTA144WK	
Q247	8-729-100-66	TRANSISTOR 2SC1623	
Q248	8-729-901-03	TRANSISTOR DTC144WK	
Q249	8-729-901-03	TRANSISTOR DTC144WK	
Q250	8-729-901-03	TRANSISTOR DTC144WK	
Q252	8-729-901-03	TRANSISTOR DTC144WK	
Q270	8-729-903-29	TRANSISTOR DTA144TK	
Q271	8-729-100-66	TRANSISTOR 2SC1623	
Q272	8-729-100-66	TRANSISTOR 2SC1623	
Q273	8-729-901-03	TRANSISTOR DTC144WK	
Q281	8-729-100-66	TRANSISTOR 2SC1623	
Q282	8-729-903-30	TRANSISTOR DTC144TK	

RESISTOR

Ref.No	Part No.	Description				Remark
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R102	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R104	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R105	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R109	1-216-015-00	METAL CHIP	39	5%	1/10W	
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R115	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R120	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R121	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R122	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R123	1-216-041-00	METAL CHIP	470	5%	1/10W	
R124	1-216-037-00	METAL CHIP	330	5%	1/10W	
R125	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R126	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R127	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R128	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R129	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R130	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R131	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R132	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R133	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R160	1-216-037-00	METAL CHIP	330	5%	1/10W	
R165	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R166	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R167	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R168	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R202	1-216-295-00	METAL CHIP	0	5%	1/10W	
R203	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R204	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R212	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R213	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R214	1-216-041-00	METAL CHIP	470	5%	1/10W	
R215	1-216-041-00	METAL CHIP	470	5%	1/10W	
R216	1-216-025-00	METAL CHIP	100	5%	1/10W	
R217	1-216-041-00	METAL CHIP	470	5%	1/10W	
R218	1-216-041-00	METAL CHIP	470	5%	1/10W	
R219	1-216-019-00	METAL CHIP	56	5%	1/10W	
R220	1-216-041-00	METAL CHIP	470	5%	1/10W	
R221	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R222	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R223	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R224	1-216-021-00	METAL CHIP	68	5%	1/10W	
R225	1-216-039-00	METAL CHIP	390	5%	1/10W	
R226	1-216-027-00	METAL CHIP	120	5%	1/10W	
R227	1-216-035-00	METAL CHIP	270	5%	1/10W	
R228	1-216-027-00	METAL CHIP	120	5%	1/10W	
R229	1-216-009-00	METAL CHIP	22	5%	1/10W	
R230	1-216-025-00	METAL CHIP	100	5%	1/10W	
R237	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R238	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R239	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R240	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R241	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R242	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R243	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R244	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R245	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R246	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R247	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R248	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R249	1-216-045-00	METAL CHIP	680	5%	1/10W	
R250	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R251	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R252	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R253	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R254	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R255	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R256	1-216-043-00	METAL CHIP	560	5%	1/10W	
R257	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R258	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R259	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R260	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R261	1-216-043-00	METAL CHIP	560	5%	1/10W	
R262	1-216-047-00	METAL CHIP	820	5%	1/10W	
R263	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R264	1-216-029-00	METAL CHIP	150	5%	1/10W	
R265	1-216-047-00	METAL CHIP	820	5%	1/10W	
R266	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R267	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R268	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R269	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R270	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R271	1-216-041-00	METAL CHIP	470	5%	1/10W	
R272	1-216-023-00	METAL CHIP	82	5%	1/10W	
R273	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R274	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R276	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R279	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R280	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R281	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R282	1-216-295-00	METAL CHIP	0	5%	1/10W	
R287	1-216-295-00	METAL CHIP	0	5%	1/10W	
R288	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R289	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R293	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R294	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R295	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R296	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R297	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R298	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R299	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R486	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV201	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	
RV202	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV203	1-230-524-11	RES, ADJ, METAL GLAZE 22K	

CRYSTAL

Ref.No	Part No.	Description	Remark
X201	1-567-347-11	OSCILLATOR, CERAMIC	

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*A-7060-633-A AU-25 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description				Remark
C401	1-124-225-00	ELECT	100MF	20%	6.3V	
C402	1-163-035-00	CERAMIC CHIP	0.047MF		50V	
C403	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V	
C404	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C405	1-163-014-00	CERAMIC CHIP	0.0027MF	10%	50V	
C406	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C408	1-124-253-00	ELECT	0.47MF	20%	50V	
C409	1-124-224-00	ELECT	47MF	20%	6.3V	
C410	1-124-224-00	ELECT	47MF	20%	6.3V	
C411	1-124-253-00	ELECT	0.47MF	20%	50V	
C412	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C413	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C414	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V	
C415	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	
C416	1-124-253-00	ELECT	0.47MF	20%	50V	
C417	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V	
C418	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	
C419	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C420	1-163-014-00	CERAMIC CHIP	0.0027MF	10%	50V	
C421	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C422	1-124-224-00	ELECT	47MF	20%	6.3V	
C423	1-124-229-00	ELECT	33MF	20%	6.3V	
C424	1-124-225-00	ELECT	100MF	20%	6.3V	
C425	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C426	1-124-255-00	ELECT	1MF	20%	50V	
C427	1-124-249-00	ELECT	0.1MF	20%	50V	
C428	1-124-257-00	ELECT	2.2MF	20%	35V	
C429	1-124-257-00	ELECT	2.2MF	20%	35V	
C430	1-124-257-00	ELECT	2.2MF	20%	35V	
C431	1-124-233-00	ELECT	10MF	20%	6.3V	
C432	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V	
C433	1-124-255-00	ELECT	1MF	20%	50V	
C434	1-163-137-00	CERAMIC CHIP	680PF	5%	50V	
C435	1-163-079-00	CERAMIC CHIP	0.039MF	10%	25V	
C436	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C437	1-163-088-00	CERAMIC CHIP	5PF	0.25PF	50V	
C438	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C439	1-124-225-00	ELECT	100MF	20%	6.3V	
C440	1-124-239-00	ELECT	6.8MF	20%	10V	
C441	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C442	1-124-239-00	ELECT	6.8MF	20%	10V	
C443	1-124-225-00	ELECT	100MF	20%	6.3V	
C444	1-124-245-00	ELECT	4.7MF	20%	16V	
C445	1-124-245-00	ELECT	4.7MF	20%	16V	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
C446	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C447	1-126-100-11	ELECT	10MF	20%	6.3V	
C450	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C451	1-124-224-00	ELECT	47MF	20%	6.3V	
C452	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V	
C453	1-124-224-00	ELECT	47MF	20%	6.3V	
C454	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V	

CONNECTOR

Ref.No	Part No.	Description
CN403	*1-564-012-00	PIN, CONNECTOR 2P
CN404	*1-564-013-00	PIN, CONNECTOR 3P
CN405	*1-564-012-00	PIN, CONNECTOR 2P
CN406	*1-564-012-00	PIN, CONNECTOR 2P
W204	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P
W205	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P

FILTER

Ref.No	Part No.	Description
FL401	1-235-398-11	BPF (1.5MHZ)

IC

Ref.No	Part No.	Description
IC401	8-752-003-79	IC CX20037A

COIL

Ref.No	Part No.	Description
L401	1-407-165-XX	MICRO INDUCTOR 47UH
L402	1-408-948-00	MICRO INDUCTOR 220UH

TRANSISTOR

Ref.No	Part No.	Description
Q401	8-729-100-67	TRANSISTOR 2SC1623-L7
Q404	8-729-900-99	TRANSISTOR DTA144WK
Q405	8-729-116-04	TRANSISTOR 2SK160-K4
Q406	8-729-100-67	TRANSISTOR 2SC1623-L7
Q407	8-729-100-76	TRANSISTOR 2SA812
Q408	8-729-100-67	TRANSISTOR 2SC1623-L7
Q409	8-729-100-67	TRANSISTOR 2SC1623-L7
Q410	8-729-100-67	TRANSISTOR 2SC1623-L7
Q411	8-729-100-67	TRANSISTOR 2SC1623-L7
Q412	8-729-901-03	TRANSISTOR DTC144WK
Q413	8-729-100-76	TRANSISTOR 2SA812
Q414	8-729-900-99	TRANSISTOR DTA144WK

RESISTOR

Ref.No	Part No.	Description				Remark
R401	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R402	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R403	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R404	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R405	1-216-060-00	METAL CHIP	3K	5%	1/10W	
R406	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R407	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R408	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R410	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R413	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R414	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R415	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R416	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R417	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R418	1-216-047-00	METAL CHIP	820	5%	1/10W	
R419	1-247-829-00	CARBON	820	5%	1/6W	
R420	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R421	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R422	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R423	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R424	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R425	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R426	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R427	1-216-045-00	METAL CHIP	680	5%	1/10W	
R428	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R429	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R430	1-216-009-00	METAL CHIP	22	5%	1/10W	
R431	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R432	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R433	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R434	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R435	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R436	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R437	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R438	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R439	1-216-023-00	METAL CHIP	82	5%	1/10W	
R440	1-216-043-00	METAL CHIP	560	5%	1/10W	
R441	1-216-037-00	METAL CHIP	330	5%	1/10W	
R442	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R443	1-216-041-00	METAL CHIP	470	5%	1/10W	
R444	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R445	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R446	1-216-045-00	METAL CHIP	680	5%	1/10W	
R447	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R448	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R449	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R450	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R451	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R452	1-216-035-00	METAL CHIP	270	5%	1/10W	
R453	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R454	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R455	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R456	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R457	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R458	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R460	1-216-295-00	METAL CHIP	0	5%	1/10W	
R461	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R462	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R463	1-216-013-00	METAL CHIP	33	5%	1/10W	
R464	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		VARIABLE RESISTOR	
RV401	1-230-523-11	RES, ADJ, METAL GLAZE 10K	
RV402	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV403	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	

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*A-7060-491-A RP-40 BOARD, COMPLETE
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A-7068-037-A RP-34P BOARD, COMPLETE

Ref.No	Part No.	Description	Remark
		CAPACITOR	
C481	1-163-111-00	CERAMIC CHIP 56PF 5% 50V	
C482	1-163-119-00	CERAMIC CHIP 120PF 5% 50V	
C483	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C484	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C485	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C486	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C487	1-124-222-00	ELECT 22MF 20% 6.3V	
		CONNECTOR	
CN481	*1-564-013-00	PIN, CONNECTOR 3P	
CN482	*1-564-016-00	PIN, CONNECTOR 6P	
CN483	*1-564-003-00	PIN, CONNECTOR 4P	
		COIL	
L481	1-408-969-21	MICRO INDUCTOR 8.2UH	
L482	1-408-948-00	MICRO INDUCTOR 220UH	
		TRANSISTOR	
Q481	8-729-117-54	TRANSISTOR 2SA1175	
Q482	8-729-100-76	TRANSISTOR 2SA812	
Q483	8-729-901-01	TRANSISTOR DTC144EK	
Q484	8-729-900-99	TRANSISTOR DTA144WK	
		RESISTOR	
R481	1-216-311-00	METAL CHIP 6.8 5% 1/10W	
R482	1-216-039-00	METAL CHIP 390 5% 1/10W	
R483	1-216-041-00	METAL CHIP 470 5% 1/10W	
R484	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R485	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R486	1-216-043-00	METAL CHIP 560 5% 1/10W	
R487	1-216-295-00	METAL CHIP 0 5% 1/10W	

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*A-7060-486-A RS-18P BOARD, COMPLETE
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3-712-106-01 REINFORCEMENT (333)
3-712-410-01 HOLDER, RS

Ref.No	Part No.	Description	Remark
		CAPACITOR	
C301	1-124-229-00	ELECT 33MF 20% 10V	
C302	1-124-224-00	ELECT 47MF 20% 6.3V	
		CONNECTOR	
CN301	*1-564-012-00	PIN, CONNECTOR 2P	
CN302	*1-564-012-00	PIN, CONNECTOR 2P	
CN304	1-563-494-11	CONNECTOR, F.P.C 6P	
CN306	*1-564-012-00	PIN, CONNECTOR 2P	
		DIODE	
D301	8-719-100-03	DIODE 1S2835	
D302	8-719-100-03	DIODE 1S2835	
D303	8-719-100-03	DIODE 1S2835	
D304	8-719-801-41	DIODE 1SS196	
D305	8-719-801-41	DIODE 1SS196	
D306	8-719-801-41	DIODE 1SS196	
D307	8-719-200-27	DIODE E10DS2	
D308	8-719-200-27	DIODE E10DS2	
D309	8-719-100-05	DIODE 1S2837	
D310	8-719-200-27	DIODE E10DS2	
		IC	
IC301	8-759-908-81	IC MB3763PF	
IC302	8-759-207-00	IC TA7733F	
		DIODE	
PH301	8-719-939-11	GP2S09-B	
PH302	8-719-939-11	GP2S09-B	
PH303	8-719-939-11	GP2S09-B	
		TRANSISTOR	
Q301	8-729-199-92	TRANSISTOR 2SD999	
Q302	8-729-901-05	TRANSISTOR DTA124EK	
Q303	8-729-900-53	TRANSISTOR DTC114EK	
Q304	8-729-901-05	TRANSISTOR DTA124EK	
Q305	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q306	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q307	8-729-901-04	TRANSISTOR DTA114EK	
Q308	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q309	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q310	8-729-903-30	TRANSISTOR DTC144TK	
Q311	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q312	8-729-903-30	TRANSISTOR DTC144TK	
Q313	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q314	8-729-903-30	TRANSISTOR DTC144TK	
		RESISTOR	
R301	1-216-190-00	METAL CHIP 470 5% 1/8W	
R302	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R303	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R304	1-216-170-00	METAL CHIP 68 5% 1/8W	
R305	1-216-073-00	METAL CHIP 10K 5% 1/10W	

When indicating parts by reference number, please include the board name.

RS-18P AF-23

Ref.No	Part No.	Description				Remark
R308	1-216-150-00	METAL CHIP	10	5%	1/8W	
R309	1-216-150-00	METAL CHIP	10	5%	1/8W	
R310	1-216-178-00	METAL CHIP	150	5%	1/8W	
R311	1-216-178-00	METAL CHIP	150	5%	1/8W	
R312	1-216-178-00	METAL CHIP	150	5%	1/8W	
R313	1-216-160-00	METAL CHIP	27	5%	1/8W	
R314	1-216-170-00	METAL CHIP	68	5%	1/8W	
R315	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R316	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R317	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R319	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R320	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R321	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R323	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R324	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R325	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R327	1-216-154-00	METAL CHIP	15	5%	1/8W	

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*A-7060-604-A AF-23 BOARD, COMPLETE

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CAPACITOR

Ref.No	Part No.	Description				Remark
C801	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C802	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C803	1-123-622-00	ELECT	22MF	20%	16V	
C804	1-124-438-00	ELECT	1MF	20%	50V	
C805	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C806	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C807	1-123-821-00	ELECT	47MF	20%	16V	
C808	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C809	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V	
C810	1-123-321-00	ELECT	220MF	20%	16V	
C811	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C812	1-123-321-00	ELECT	220MF	20%	16V	
C813	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C814	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C815	1-123-821-00	ELECT	47MF	20%	16V	
C816	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C817	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C818	1-123-617-00	ELECT	10MF	20%	16V	
C819	1-124-462-00	ELECT	10MF	20%	16V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN801	*1-564-002-00	PIN, CONNECTOR 3P	
CN802	*1-564-015-00	PIN, CONNECTOR 5P	
CN803	*1-564-001-11	PIN, CONNECTOR 2P	
CN805	*1-564-001-11	PIN, CONNECTOR 2P	
CN807	*1-564-008-00	PIN, CONNECTOR 9P	

IC

Ref.No	Part No.	Description	Remark
IC801	———	IC HIM21	
IC802	9-990-856-01	IC UPD49G	
IC803	9-990-855-01	IC LAG648	
IC803			
IC804	8-759-193-58	IC UPC358G	

COIL

Ref.No	Part No.	Description	Remark
L801	1-407-718-00	MICRO INDUCTOR 1.2MMH	

IC LINK

Ref.No	Part No.	Description	Remark
PS801⚠	1-532-605-11	LINK, IC (ICP-N10)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q801	8-729-100-66	TRANSISTOR 2SC1623	
Q802	8-729-901-15	TRANSISTOR DTA144EK	
Q803	8-729-100-66	TRANSISTOR 2SC1623	
Q804	8-729-100-66	TRANSISTOR 2SC1623	
Q805	8-729-199-92	TRANSISTOR 2SD999	
Q806	8-729-104-24	TRANSISTOR 2SB804	
Q807	8-729-199-92	TRANSISTOR 2SD999	
Q808	8-729-104-24	TRANSISTOR 2SB804	
Q809	8-729-100-66	TRANSISTOR 2SC1623	
Q810	8-729-100-66	TRANSISTOR 2SC1623	
Q811	8-729-901-15	TRANSISTOR DTA144EK	

RESISTOR

Ref.No	Part No.	Description				Remark
R801	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R802	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R803	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R804	1-216-041-00	METAL CHIP	470	5%	1/10W	
R805	1-216-295-00	METAL CHIP	0	5%	1/10W	
R806	1-216-096-00	METAL CHIP	91K	5%	1/10W	
R807	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R808	1-216-082-00	METAL CHIP	24K	5%	1/10W	
R809	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R810	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R811	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R812	1-216-041-00	METAL CHIP	470	5%	1/10W	
R813	1-216-080-00	METAL CHIP	20K	5%	1/10W	
R814	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R815	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R816	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R817	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R818	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R819	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R820	1-216-058-00	METAL CHIP	2.4K	5%	1/10W	
R821	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R822	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R823	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R824	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R825	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R826	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R827	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R828	1-216-158-00	METAL CHIP	22	5%	1/8W	
R829	1-216-158-00	METAL CHIP	22	5%	1/8W	

- IC801 is unreplaceable. If it is defective, replace AF-23 board with a new one to which IC801 has been mounted.
- IC861 (CCD forcus sensor) which has been connected to CN807 on AF-23 board is unreplaceable. If it is defective, replace zoom lens with a new one.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R830	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R831	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R832	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R833	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R834	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R835	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R836	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R837	1-216-058-00	METAL CHIP	2.4K	5%	1/10W	
R838	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R839	1-216-097-00	METAL CHIP	100K	5%	1/10W	

VARIABLE RESISTOR

RV801	1-230-874-11	RES, ADJ, METAL GLAZE	100K
RV802	1-230-870-21	RES, ADJ, METAL GLAZE	10K
RV803	1-237-411-11	RES, ADJ, METAL GLAZE	1K

CRYSTAL

X801	1-567-470-11	VIBRATOR, CERAMIC (6MHZ)

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*A-7060-618-A SK-12P BOARD, COMPLETE
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*3-712-579-01 HOLDER, LCD

CAPACITOR

C301	1-135-096-21	TANTAL. CHIP	4.7MF	20%	10V
C302	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C303	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C304	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C305	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C306	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C307	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C308	1-163-081-00	CERAMIC CHIP	0.22MF		25V

DIODE

D301	8-719-100-03	DIODE 1S2835
D302	8-719-801-45	DIODE 1SS187
D303	8-719-918-67	DIODE GL-1EG102

IC

IC301	8-759-111-52	IC UPD7502G-376-12
IC302	8-759-106-26	IC UPD4069UBG

INDICATOR TUBE, FLUORESCENT

ND301	1-807-613-11	DISPLAY PANEL, LIQUID CRYSTAL

TRANSISTOR

Q301	8-729-901-01	TRANSISTOR DTC144EK
Q302	8-729-901-01	TRANSISTOR DTC144EK
Q303	8-729-901-01	TRANSISTOR DTC144EK

Ref.No	Part No.	Description				Remark

RESISTOR

R301	1-216-097-00	METAL CHIP	100K	5%	1/10W
R302	1-216-097-00	METAL CHIP	100K	5%	1/10W
R303	1-216-097-00	METAL CHIP	100K	5%	1/10W
R304	1-216-097-00	METAL CHIP	100K	5%	1/10W
R305	1-216-097-00	METAL CHIP	100K	5%	1/10W
R306	1-216-097-00	METAL CHIP	100K	5%	1/10W
R307	1-216-097-00	METAL CHIP	100K	5%	1/10W
R308	1-216-097-00	METAL CHIP	100K	5%	1/10W
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W
R310	1-216-073-00	METAL CHIP	10K	5%	1/10W
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W
R313	1-216-073-00	METAL CHIP	10K	5%	1/10W
R314	1-216-073-00	METAL CHIP	10K	5%	1/10W
R315	1-216-073-00	METAL CHIP	10K	5%	1/10W
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W
R318	1-216-073-00	METAL CHIP	10K	5%	1/10W
R319	1-216-073-00	METAL CHIP	10K	5%	1/10W
R320	1-216-073-00	METAL CHIP	10K	5%	1/10W
R321	1-216-073-00	METAL CHIP	10K	5%	1/10W
R322	1-216-073-00	METAL CHIP	10K	5%	1/10W
R323	1-216-073-00	METAL CHIP	10K	5%	1/10W
R324	1-216-073-00	METAL CHIP	10K	5%	1/10W
R325	1-216-097-00	METAL CHIP	100K	5%	1/10W
R326	1-216-097-00	METAL CHIP	100K	5%	1/10W
R327	1-216-097-00	METAL CHIP	100K	5%	1/10W
R328	1-216-073-00	METAL CHIP	10K	5%	1/10W
R329	1-216-073-00	METAL CHIP	10K	5%	1/10W
R330	1-216-073-00	METAL CHIP	10K	5%	1/10W
R331	1-216-073-00	METAL CHIP	10K	5%	1/10W
R332	1-216-121-00	METAL CHIP	1M	5%	1/10W
R334	1-216-073-00	METAL CHIP	10K	5%	1/10W
R335	1-216-073-00	METAL CHIP	10K	5%	1/10W
R336	1-216-073-00	METAL CHIP	10K	5%	1/10W
R337	1-216-037-00	METAL CHIP	330	5%	1/10W
R338	1-216-073-00	METAL CHIP	10K	5%	1/10W

SWITCH

S301	1-554-371-31	SWITCH, TACT (❚❚)
S302	1-554-371-31	SWITCH, TACT (◀◀)
S303	1-554-371-31	SWITCH, TACT (▶▶)
S304	1-554-371-31	SWITCH, TACT (■)
S305	1-554-371-31	SWITCH, TACT (RESET)
S306	1-554-371-31	SWITCH, TACT (MEMORY)
S307	1-554-371-31	SWITCH, TACT (INSERT)
S308	1-554-371-31	SWITCH, TACT (▶)
S309	1-553-977-00	SWITCH, SLIDE (SP/LP)
S310	1-553-977-00	SWITCH, SLIDE (EDIT)
S311	1-554-371-31	SWITCH, TACT (VTR POWER)
S312	1-554-371-31	SWITCH, TACT (❚❚▶)

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
S313	1-554-364-00	SWITCH, SLIDE (⏏)	
S314	1-554-364-00	SWITCH, SLIDE (REC)	
		CRYSTAL	
X301	1-527-532-00	OSCILLATOR, CERAMIC	

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	*A-7050-619-A	SC-6P BOARD, COMPLETE ***********************	
	*1-533-146-00	HOLDER, FUSE	
		CAPACITOR	
C381	1-123-321-00	ELECT 220MF 20% 16V	
C382	1-123-323-00	ELECT 470MF 20% 16V	
		CONNECTOR	
CN381	*1-560-891-00	PIN, CONNECTOR 3P	
CN382	*1-564-029-00	PIN, CONNECTOR 4P	
CN384	*1-564-018-11	PIN, CONNECTOR 8P	
CN385	1-562-582-12	SOCKET, CONNECTOR 22P	
CN386	*1-564-187-00	PIN, CONNECTOR 1P	
		COMPOSITION CIRCUIT BLOCK	
CP381	1-232-838-11	COMPOSITION CIRCUIT BLOCK	
		FUSE	
F381	⚠1-532-237-11	FUSE TIME-LAG (250V/T3.15A)	
		COIL	
L381	1-410-337-11	MICRO INDUCTOR 1UH	
L382	1-410-337-11	MICRO INDUCTOR 1UH	
L383	1-410-337-11	MICRO INDUCTOR 1UH	
L384	1-410-337-11	MICRO INDUCTOR 1UH	
		IC LINK	
PS901	⚠1-532-840-21	LINK, IC (PRF) 1250	
PS902	⚠1-532-840-21	LINK, IC (PRF) 1250	
PS903	⚠1-532-840-21	LINK, IC (PRF) 1250	
		TRANSISTOR	
Q381	8-729-901-01	TRANSISTOR DTC144EK	
		RESISTOR	
R381	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R382	1-216-015-00	METAL CHIP 39 5% 1/10W	
R383	1-216-015-00	METAL CHIP 39 5% 1/10W	

Ref.No	Part No.	Description	Remark
	*A-7060-620-A	CC-6P BOARD, COMPLETE ***********************	
		CAPACITOR	
C901	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C902	1-124-287-00	ELECT 10MF 20% 10V	
C903	1-124-287-00	ELECT 10MF 20% 10V	
C904	1-124-224-00	ELECT 47MF 20% 6.3V	
C906	1-123-298-00	ELECT 470MF 20% 6.3V	
C907	1-163-005-00	CERAMIC CHIP 470PF 10% 50V	
		JACK	
J901	1-563-469-11	JACK, PIN (MINIATURE) 2P (IN/OUT)	
		TRANSISTOR	
Q901	8-729-901-03	TRANSISTOR DTC144WK	
Q902	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q903	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q904	8-729-901-03	TRANSISTOR DTC144WK	
Q905	8-729-901-03	TRANSISTOR DTC144WK	
Q906	8-729-100-67	TRANSISTOR 2SC1623-L7	
		RESISTOR	
R901	1-216-015-00	METAL CHIP 39 5% 1/10W	
R902	1-216-015-00	METAL CHIP 39 5% 1/10W	
R903	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R904	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R905	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R906	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R907	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R908	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R909	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R910	1-216-017-00	METAL CHIP 47 5% 1/10W	
R911	1-216-041-00	METAL CHIP 470 5% 1/10W	
R912	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R913	1-216-049-00	METAL CHIP 1K 5% 1/10W	
		VARIABLE RESISTOR	
RV901	1-237-411-11	RES, VAR, CARBON 1K (SHARPNESS)	

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	*A-7060-621-A	ME-4P BOARD, COMPLETE ***********************	
	2-279-715-21	RIVET, NYLON	
		CAPACITOR	
C701	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C702	1-123-616-00	ELECT 4.7MF 20% 25V	
C703	1-123-647-00	ELECT 47MF 20% 6.3V	
C704	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	
C705	1-123-647-00	ELECT 47MF 20% 6.3V	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C706	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C707	1-123-661-00	ELECT 100MF	20%	6.3V
C708	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C709	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C710	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C711	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C712	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C713	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C714	1-162-637-91	CERAMIC CHIP 0.47MF		16V
C715	1-123-820-00	ELECT 33MF	20%	16V
C716	1-123-820-00	ELECT 33MF	20%	16V
C717	1-162-637-91	CERAMIC CHIP 0.47MF		16V
C718	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C719	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C720	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C721	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C722	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C723	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C724	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C725	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C726	1-123-616-00	ELECT 4.7MF	20%	25V
C727	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V
C728	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C729	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C730	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C731	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C732	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C733	1-135-095-00	TANTAL. CHIP 1.5MF	20%	10V
C734	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V
C735	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C736	1-135-093-21	TANTAL. CHIP 10MF	20%	10V
C737	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V
C738	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C739	1-135-125-21	TANTAL. CHIP 33MF	20%	10V
C740	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C741	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C742	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C743	1-163-107-00	CERAMIC CHIP 39PF	5%	50V
C744	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C745	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C746	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C747	1-163-107-00	CERAMIC CHIP 39PF	5%	50V
C748	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C749	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C750	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C751	1-163-107-00	CERAMIC CHIP 39PF	5%	50V
C752	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C753	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C754	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C755	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C756	1-162-638-11	CERAMIC CHIP 1MF		16V
C757	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C758	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C759	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C760	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C761	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C762	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C763	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C764	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C765	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C766	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C767	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C768	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C769	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C770	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C771	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C772	1-135-093-21	TANTAL. CHIP 10MF	20%	10V
C773	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C774	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C775	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C776	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C777	1-163-035-00	CERAMIC CHIP 0.047MF	10%	25V
C778	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C779	1-131-387-00	TANTALUM 47MF	10%	6.3V

DIODE

D701	8-719-100-05	DIODE 1S2837
D702	8-719-801-52	DIODE 1SS190
D703	8-719-100-03	DIODE 1S2835
D704	8-719-101-23	DIODE 1SS123
D705	8-719-100-05	DIODE 1S2837
D706	8-719-801-52	DIODE 1SS190

FILTER

FL701	1-235-442-11	FILTER, LOW PASS (YH)

IC

IC701	8-759-908-09	IC CX20053
IC702	8-759-106-22	IC UPD4052BG
IC703	8-759-914-44	IC TL431CLPB
IC704	8-752-303-90	IC CX23039
IC705	8-752-015-10	IC CX20151

COIL

L701	1-410-389-11	INDUCTOR CHIP 47UH
L702	1-410-389-11	INDUCTOR CHIP 47UH

TRANSISTOR

Q701	8-729-109-44	TRANSISTOR 2SK94
Q702	8-729-109-44	TRANSISTOR 2SK94
Q703	8-729-109-44	TRANSISTOR 2SK94
Q704	8-729-100-66	TRANSISTOR 2SC1623
Q705	8-729-100-66	TRANSISTOR 2SC1623
Q706	8-729-100-66	TRANSISTOR 2SC1623
Q707	8-729-100-66	TRANSISTOR 2SC1623

When indicating parts by reference number, please include the board name.

ME-4P

Ref.No	Part No.	Description				Remark
Q708	8-729-100-66	TRANSISTOR 2SC1623				
Q709	8-729-100-66	TRANSISTOR 2SC1623				
Q710	8-729-100-66	TRANSISTOR 2SC1623				
Q711	8-729-100-66	TRANSISTOR 2SC1623				
Q712	8-729-100-66	TRANSISTOR 2SC1623				
Q713	8-729-100-66	TRANSISTOR 2SC1623				
Q714	8-729-100-66	TRANSISTOR 2SC1623				
Q715	8-729-100-66	TRANSISTOR 2SC1623				
Q716	8-729-100-66	TRANSISTOR 2SC1623				
Q717	8-729-100-66	TRANSISTOR 2SC1623				
Q718	8-729-100-76	TRANSISTOR 2SA812				
Q719	8-729-100-76	TRANSISTOR 2SA812				
Q720	8-729-100-76	TRANSISTOR 2SA812				
Q721	8-729-100-76	TRANSISTOR 2SA812				
Q722	8-729-100-66	TRANSISTOR 2SC1623				
Q723	8-729-100-66	TRANSISTOR 2SC1623				
Q724	8-729-100-66	TRANSISTOR 2SC1623				
Q725	8-729-100-66	TRANSISTOR 2SC1623				
		RESISTOR				
R705	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R706	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R707	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R708	1-216-035-00	METAL CHIP	270	5%	1/10W	
R709	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R710	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R713	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R714	1-216-035-00	METAL CHIP	270	5%	1/10W	
R717	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R718	1-216-035-00	METAL CHIP	270	5%	1/10W	
R719	1-216-033-00	METAL CHIP	220	5%	1/10W	
R720	1-216-033-00	METAL CHIP	220	5%	1/10W	
R721	1-216-033-00	METAL CHIP	220	5%	1/10W	
R722	1-216-033-00	METAL CHIP	220	5%	1/10W	
R723	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R724	1-216-025-00	METAL CHIP	100	5%	1/10W	
R725	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R726	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R727	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R728	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R729	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R730	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R731	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R732	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R733	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R734	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R735	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R736	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R737	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R738	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R739	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R740	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R741	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R742	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R743	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R744	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R745	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R746	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R747	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R748	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R749	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R750	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R751	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R752	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R753	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R754	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R755	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R756	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R757	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R758	1-216-025-00	METAL CHIP	100	5%	1/10W	
R759	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R760	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R761	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R762	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R763	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R764	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R765	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R766	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R767	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R768	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R769	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R770	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R772	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R773	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R774	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R775	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R776	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R777	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R778	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R779	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R780	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R781	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R782	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R783	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R784	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R785	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R786	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R787	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R788	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R789	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R790	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R791	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R792	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R793	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R794	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R795	1-216-049-00	METAL CHIP	1K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R796	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R797	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R798	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R799	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R801	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R802	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R803	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R804	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R805	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R806	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R807	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R808	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R809	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R810	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R811	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R812	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R813	1-216-037-00	METAL CHIP	330	5%	1/10W	
R814	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R815	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R816	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R817	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R818	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R819	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R823	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R824	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R825	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R826	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R827	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R828	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R829	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R830	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R831	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R832	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R833	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R834	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R835	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R836	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R837	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R838	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R839	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R840	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R841	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R842	1-216-295-00	METAL CHIP	0	5%	1/10W	
R843	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R844	1-249-405-11	CARBON	100	5%	1/6W	
R845	1-249-417-11	CARBON	1K	5%	1/6W	
R846	1-249-414-11	CARBON	560	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV701	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV702	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV703	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV704	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV705	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV706	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV707	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV708	1-230-871-21	RES, ADJ, METAL GLAZE 22K	
RV709	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV710	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV711	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV712	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV713	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV714	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV715	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV716	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV717	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV718	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV719	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV720	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV721	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV722	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV723	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV726	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV727	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV728	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV729	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV730	1-230-870-21	RES, ADJ, METAL GLAZE 10K	
RV731	1-230-870-21	RES, ADJ, METAL GLAZE 10K	

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*A-7060-622-A CP-18P BOARD, COMPLETE
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A-7068-049-A DT-61P BOARD, COMPLETE
2-279-715-21 RIVET, NYLON

CAPACITOR

C701	1-162-637-91	CERAMIC CHIP	0.47MF		16V
C702	1-123-617-00	ELECT	10MF	20%	16V
C703	1-162-637-91	CERAMIC CHIP	0.47MF		16V
C704	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C705	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C706	1-162-637-91	CERAMIC CHIP	0.47MF		16V
C707	1-135-083-00	TANTAL. CHIP	0.47MF	20%	25V
C708	1-162-637-91	CERAMIC CHIP	0.47MF		16V
C709	1-123-616-00	ELECT	4.7MF	20%	25V
C710	1-131-388-00	TANTALUM	68MF	10%	6.3V
C711	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V
C712	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C713	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C714	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C715	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C716	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C717	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C718	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C719	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C720	1-163-109-00	CERAMIC CHIP	47PF	5%	50V

* The IC701 and IC002 have not been mounted on the already mounted CP-18 board and DT-61 board respectively.
Moreover, each single IC does not become repair part but with a pair they become a CCD imager block (IU021-K-AA).

When indicating parts by reference number, please include the board name.

CP-18P

Ref.No	Part No.	Description		Remark
C721	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C722	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C723	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C724	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C725	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C726	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C727	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C729	1-123-821-00	ELECT 47MF	20%	16V
C730	1-163-119-00	CERAMIC CHIP 120PF	5%	50V
C731	1-163-083-00	CERAMIC CHIP 1PF	0.25PF	50V
C732	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C733	1-135-104-00	TANTAL. CHIP 10MF	20%	4V
C734	1-123-617-00	ELECT 10MF	20%	16V
C735	1-135-104-00	TANTAL. CHIP 10MF	20%	4V
C736	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C737	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V
C738	1-162-638-11	CERAMIC CHIP 1MF		16V
C739	1-162-637-91	CERAMIC CHIP 0.47MF		16V
C740	1-135-096-21	TANTAL. CHIP 4.7MF	20%	10V
C741	1-124-229-00	ELECT 33MF	20%	10V
C742	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C743	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C744	1-124-245-00	ELECT 4.7MF	20%	16V
C745	1-124-233-00	ELECT 10MF	20%	6.3V
C748	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C749	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C750	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C751	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C752	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C753	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C762	1-123-645-00	ELECT 33MF	20%	10V
C763	1-123-646-00	ELECT 33MF	20%	6.3V
C764	1-123-645-00	ELECT 33MF	20%	10V
C765	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C768	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C769	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C770	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C771	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C772	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C773	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C774	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C775	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C776	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C777	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C778	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C779	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C780	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C781	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C782	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C783	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C784	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C785	1-124-566-11	ELECT 120MF	20%	6.3V
C786	1-163-101-00	CERAMIC CHIP 22PF	5%	50V

Ref.No	Part No.	Description		Remark
C787	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C789	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C790	1-163-005-00	CERAMIC CHIP 470PF	10%	50V
C791	1-163-099-00	CERAMIC CHIP 18PF	5%	50V
C792	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C793	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C794	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C795	1-163-105-00	CERAMIC CHIP 33PF	5%	50V

CONNECTOR

CN704	*1-564-005-00	PIN, CONNECTOR 6P

TRIMMER

CT701	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30PF
CT702	1-141-329-11	CAP, VAR, TRIMMER (CHIP) 30PF

DIODE

D701	8-719-801-48	DIODE 1SS193
D702	8-713-220-01	DIODE 1T32-2
D703	8-719-801-48	DIODE 1SS193
D704	8-719-101-23	DIODE 1SS123
D708	8-719-801-48	DIODE 1SS193
D709	8-719-801-52	DIODE 1SS190

DELAY LINE

DL701	1-415-448-11	DELAY LINE

FILTER

FL701	1-235-439-11	FILTER, BAND PASS (4.43MHZ)

IC

IC701	8-750-010-21	IU021-K-AA (CCD IMAGER BLOCK)
IC702	8-752-321-16	IC CXD1030M
IC703	8-759-908-11	IC CX20055

COIL

L701	1-408-958-21	MICRO INDUCTOR 1UH
L702	1-410-387-11	INDUCTOR CHIP 33UH
L703	1-410-381-11	INDUCTOR CHIP 10UH
L704	1-421-904-21	COIL, CHOKE 47UH
L706	1-410-369-11	INDUCTOR CHIP 1UH
L707	1-410-387-11	INDUCTOR CHIP 33UH
L708	1-410-387-11	INDUCTOR CHIP 33UH
L709	1-410-369-11	INDUCTOR CHIP 1UH

TRANSISTOR

Q701	8-729-175-72	TRANSISTOR 2SC2757-33
Q702	8-729-100-76	TRANSISTOR 2SA812
Q703	8-729-100-66	TRANSISTOR 2SC1623
Q704	8-729-175-72	TRANSISTOR 2SC2757-33
Q705	8-729-175-72	TRANSISTOR 2SC2757-33

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
0706	8-729-102-06	TRANSISTOR 2SC2223				
0708	8-729-100-66	TRANSISTOR 2SC1623				
0709	8-729-100-66	TRANSISTOR 2SC1623				
0710	8-729-100-66	TRANSISTOR 2SC1623				
0711	8-729-901-03	TRANSISTOR DTC144WK				
0712	8-729-901-04	TRANSISTOR DTA114EK				

RESISTOR

Ref.No	Part No.	Description				Remark
R701	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R702	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R703	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R704	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R705	1-216-025-00	METAL CHIP	100	5%	1/10W	
R706	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R707	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R708	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R709	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R710	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R711	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R712	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R713	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R714	1-216-039-00	METAL CHIP	390	5%	1/10W	
R715	1-216-039-00	METAL CHIP	390	5%	1/10W	
R716	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R717	1-216-041-00	METAL CHIP	470	5%	1/10W	
R718	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R720	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R721	1-216-043-00	METAL CHIP	560	5%	1/10W	
R722	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R723	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R724	1-216-295-00	METAL CHIP	0	5%	1/10W	
R726	1-216-025-00	METAL CHIP	100	5%	1/10W	
R727	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R728	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R729	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R730	1-216-025-00	METAL CHIP	100	5%	1/10W	
R731	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R732	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R733	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R734	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R735	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R736	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R737	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R738	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R739	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R740	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R741	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R742	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R743	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R744	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R745	1-216-025-00	METAL CHIP	100	5%	1/10W	
R746	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R747	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R748	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R749	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R750	1-216-295-00	METAL CHIP	0	5%	1/10W	
R751	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R752	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R753	1-216-022-00	METAL CHIP	75	5%	1/10W	
R754	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R755	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R756	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R757	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R758	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R759	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R760	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R761	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R762	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R766	1-216-295-00	METAL CHIP	0	5%	1/10W	
R767	1-216-295-00	METAL CHIP	0	5%	1/10W	
R775	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R776	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R777	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R778	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R779	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R781	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R782	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R783	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R784	1-216-296-00	METAL CHIP	0	5%	1/8W	
R785	1-216-296-00	METAL CHIP	0	5%	1/8W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV701	1-237-529-11	RES, ADJ, METAL FILM 1K	
RV702	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV703	1-230-287-00	RES, ADJ, METAL GLAZE 10K	

CRYSTAL

Ref.No	Part No.	Description	Remark
X701	1-567-732-11	VIBRATOR, CRYSTAL (28MHZ)	
X702	1-567-733-11	VIBRATOR, CRYSTAL (17MHZ)	

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*A-7060-624-A AW-3P BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description				Remark
C701	1-124-224-00	ELECT	47MF	20%	6.3V	
C702	1-124-224-00	ELECT	47MF	20%	6.3V	
C703	1-162-638-11	CERAMIC CHIP	1MF		16V	
C704	1-162-638-11	CERAMIC CHIP	1MF		16V	
C705	1-162-638-11	CERAMIC CHIP	1MF		16V	
C706	1-136-287-11	FILM	0.0047MF	5%	100V	
C707	1-136-293-11	FILM	0.0082MF	5%	100V	
C708	1-136-293-11	FILM	0.0082MF	5%	100V	
C709	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C710	1-163-038-00	CERAMIC CHIP	0.1MF		25V	

When indicating parts by reference number, please include the board name.

AW-3P AT-5P

Ref.No	Part No.	Description			Remark
C711	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C712	1-124-224-00	ELECT	47MF	20%	6.3V
C713	1-124-224-00	ELECT	47MF	20%	6.3V
C714	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C715	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C716	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C717	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C718	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C719	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C722	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C723	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V
C724	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V
C725	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C726	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C727	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C728	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C729	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C730	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C731	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C732	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C733	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V

CONNECTOR

CN702	*1-564-008-00	PIN, CONNECTOR 9P
CN703	*1-564-008-00	PIN, CONNECTOR 9P
CN704	*1-563-530-11	CONNECTOR, BOARD TO BOARD 11P

DIODE

D701	8-719-100-05	DIODE 1S2837
D703	8-719-801-48	DIODE 1SS193
D704	8-719-801-48	DIODE 1SS193
D705	8-719-801-48	DIODE 1SS193
D706	8-719-801-48	DIODE 1SS193
D707	8-719-801-48	DIODE 1SS193
D708	8-719-911-19	DIODE 1SS119
D709	8-719-911-19	DIODE 1SS119

IC

IC701	8-752-322-56	IC CXD1073Q
IC702	8-759-103-25	IC UPD4053BG
IC703	8-759-103-03	IC UPD6107G
IC704	8-759-106-23	IC UPD4066BG

TRANSISTOR

Q701	8-729-901-06	TRANSISTOR DTA144EK
Q702	8-729-100-76	TRANSISTOR 2SA812

RESISTOR

R701	1-216-077-00	METAL CHIP	15K	5%	1/10W
R702	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R703	1-216-079-00	METAL CHIP	18K	5%	1/10W
R704	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R705	1-216-063-00	METAL CHIP	3.9K	5%	1/10W

Ref.No	Part No.	Description			Remark
R706	1-216-081-00	METAL CHIP	22K	5%	1/10W
R709	1-216-073-00	METAL CHIP	10K	5%	1/10W
R710	1-216-073-00	METAL CHIP	10K	5%	1/10W
R711	1-216-089-00	METAL CHIP	47K	5%	1/10W
R712	1-216-081-00	METAL CHIP	22K	5%	1/10W
R713	1-216-089-00	METAL CHIP	47K	5%	1/10W
R714	1-216-093-00	METAL CHIP	68K	5%	1/10W
R715	1-216-097-00	METAL CHIP	100K	5%	1/10W
R716	1-216-093-00	METAL CHIP	68K	5%	1/10W
R717	1-216-097-00	METAL CHIP	100K	5%	1/10W
R718	1-216-081-00	METAL CHIP	22K	5%	1/10W
R719	1-216-081-00	METAL CHIP	22K	5%	1/10W
R720	1-216-081-00	METAL CHIP	22K	5%	1/10W
R721	1-216-081-00	METAL CHIP	22K	5%	1/10W
R722	1-216-081-00	METAL CHIP	22K	5%	1/10W
R723	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R726	1-216-073-00	METAL CHIP	10K	5%	1/10W
R727	1-216-073-00	METAL CHIP	10K	5%	1/10W
R728	1-216-077-00	METAL CHIP	15K	5%	1/10W
R729	1-216-077-00	METAL CHIP	15K	5%	1/10W
R730	1-216-093-00	METAL CHIP	68K	5%	1/10W
R731	1-216-073-00	METAL CHIP	10K	5%	1/10W
R734	1-216-089-00	METAL CHIP	47K	5%	1/10W
R735	1-216-107-00	METAL CHIP	270K	5%	1/10W
R736	1-249-422-11	CARBON	2.7K	5%	1/6W

VARIABLE RESISTOR

RV701	1-230-871-21	RES, ADJ, METAL GLAZE 22K
RV702	1-230-871-21	RES, ADJ, METAL GLAZE 22K

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*A-7060-625-A AT-5P BOARD, COMPLETE
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CAPACITOR

C851	1-163-205-00	CERAMIC CHIP	0.001MF	5%	50V
C852	1-163-205-00	CERAMIC CHIP	0.001MF	5%	50V
C853	1-163-205-00	CERAMIC CHIP	0.001MF	5%	50V
C854	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C855	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C856	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C857	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C858	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C859	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C860	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C861	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C862	1-124-224-00	ELECT	47MF	20%	6.3V
C863	1-124-224-00	ELECT	47MF	20%	6.3V
C864	1-162-638-11	CERAMIC CHIP	1MF		16V
C866	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V

CONNECTOR

CN851	*1-564-005-00	PIN, CONNECTOR 6P

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
CN852	*1-566-130-11	CONNECTOR, BOARD TO BOARD 11P	

IC

IC851	8-759-908-12	IC CX20056	

TRANSISTOR

Q851	8-729-100-76	TRANSISTOR 2SA812	
Q852	8-729-901-06	TRANSISTOR DTA144EK	
Q853	8-729-100-76	TRANSISTOR 2SA812	
Q854	8-729-901-01	TRANSISTOR DTC144EK	
Q855	8-729-100-66	TRANSISTOR 2SC1623	
Q856	8-729-100-76	TRANSISTOR 2SA812	
Q857	8-729-100-76	TRANSISTOR 2SA812	
Q858	8-729-100-66	TRANSISTOR 2SC1623	
Q859	8-729-100-76	TRANSISTOR 2SA812	
Q860	8-729-100-76	TRANSISTOR 2SA812	
Q861	8-729-100-66	TRANSISTOR 2SC1623	
Q862	8-729-100-76	TRANSISTOR 2SA812	

RESISTOR

R851	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R852	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R853	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R855	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R856	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R857	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R858	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R859	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R860	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R861	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R862	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R863	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R866	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R867	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R868	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R869	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R871	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R872	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R873	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R874	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R875	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R876	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R877	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R878	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R879	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R880	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R881	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R882	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R884	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R885	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R886	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R887	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R888	1-216-085-00	METAL CHIP	33K	5%	1/10W	

VARIABLE RESISTOR

RV851	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV852	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV853	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV854	1-230-287-00	RES, ADJ, METAL GLAZE 10K	
RV855	1-230-287-00	RES, ADJ, METAL GLAZE 10K	

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*A-7060-626-A AI-1P BOARD, COMPLETE

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CAPACITOR

C781	1-124-224-00	ELECT	47MF	20%	6.3V	
C782	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C783	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C784	1-163-081-00	CERAMIC CHIP	0.22MF		25V	
C785	1-124-222-00	ELECT	22MF	20%	6.3V	
C786	1-124-222-00	ELECT	22MF	20%	6.3V	
C787	1-124-222-00	ELECT	22MF	20%	6.3V	
C789	1-124-236-00	ELECT	47MF	20%	10V	
C790	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C791	1-124-236-00	ELECT	47MF	20%	10V	
C792	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C793	1-124-255-00	ELECT	1MF	20%	50V	
C794	1-163-038-00	CERAMIC CHIP	0.1MF		25V	
C795	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V	
C797	1-131-375-00	TANTALUM	4.7MF	10%	10V	

CONNECTOR

CN781	*1-564-007-00	PIN, CONNECTOR 8P	
CN782	*1-564-003-00	PIN, CONNECTOR 4P	

DIODE

D781	8-719-801-48	DIODE 1SS193	
D782	8-719-801-48	DIODE 1SS193	
D783	8-719-801-48	DIODE 1SS193	
D784	8-719-801-48	DIODE 1SS193	
D785	8-719-101-23	DIODE 1SS123	
D786	8-719-101-23	DIODE 1SS123	
D789	8-719-801-48	DIODE 1SS193	

IC

IC781	8-759-100-95	IC UPC324G2	
IC782	8-759-100-95	IC UPC324G2	
IC783	8-759-103-25	IC UPD4053BG	
IC784	8-759-103-03	IC UPD6107G	

TRANSISTOR

Q781	8-729-100-76	TRANSISTOR 2SA812	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q782	8-729-100-66	TRANSISTOR 2SC1623	
Q783	8-729-100-76	TRANSISTOR 2SA812	
Q784	8-729-100-66	TRANSISTOR 2SC1623	
Q785	8-729-100-66	TRANSISTOR 2SC1623	
Q786	8-729-100-76	TRANSISTOR 2SA812	
Q787	8-729-100-76	TRANSISTOR 2SA812	
Q788	8-729-100-66	TRANSISTOR 2SC1623	
Q789	8-729-100-76	TRANSISTOR 2SA812	
Q790	8-729-901-01	TRANSISTOR DTC144EK	
Q791	8-729-100-66	TRANSISTOR 2SC1623	
Q792	8-729-100-76	TRANSISTOR 2SA812	
Q793	8-729-100-76	TRANSISTOR 2SA812	

RESISTOR

Ref.No	Part No.	Description			
R781	1-216-107-00	METAL CHIP	270K	5%	1/10W
R782	1-216-049-00	METAL CHIP	1K	5%	1/10W
R783	1-216-073-00	METAL CHIP	10K	5%	1/10W
R784	1-216-073-00	METAL CHIP	10K	5%	1/10W
R785	1-216-073-00	METAL CHIP	10K	5%	1/10W
R786	1-216-089-00	METAL CHIP	47K	5%	1/10W
R787	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R788	1-216-073-00	METAL CHIP	10K	5%	1/10W
R789	1-216-121-00	METAL CHIP	1M	5%	1/10W
R790	1-216-085-00	METAL CHIP	33K	5%	1/10W
R791	1-216-089-00	METAL CHIP	47K	5%	1/10W
R792	1-216-089-00	METAL CHIP	47K	5%	1/10W
R793	1-216-117-00	METAL CHIP	680K	5%	1/10W
R794	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R795	1-216-089-00	METAL CHIP	47K	5%	1/10W
R796	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R797	1-216-105-00	METAL CHIP	220K	5%	1/10W
R798	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R799	1-216-073-00	METAL CHIP	10K	5%	1/10W
R800	1-216-075-00	METAL CHIP	12K	5%	1/10W
R801	1-216-073-00	METAL CHIP	10K	5%	1/10W
R802	1-216-081-00	METAL CHIP	22K	5%	1/10W
R803	1-216-081-00	METAL CHIP	22K	5%	1/10W
R804	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R805	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R806	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R809	1-216-073-00	METAL CHIP	10K	5%	1/10W
R810	1-216-089-00	METAL CHIP	47K	5%	1/10W
R811	1-216-077-00	METAL CHIP	15K	5%	1/10W
R812	1-216-073-00	METAL CHIP	10K	5%	1/10W
R813	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R814	1-216-091-00	METAL CHIP	56K	5%	1/10W
R815	1-216-105-00	METAL CHIP	220K	5%	1/10W
R816	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R817	1-216-083-00	METAL CHIP	27K	5%	1/10W
R818	1-216-091-00	METAL CHIP	56K	5%	1/10W
R819	1-216-073-00	METAL CHIP	10K	5%	1/10W
R820	1-216-041-00	METAL CHIP	470	5%	1/10W
R821	1-216-081-00	METAL CHIP	22K	5%	1/10W
R822	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R823	1-216-081-00	METAL CHIP	22K	5%	1/10W
R824	1-216-089-00	METAL CHIP	47K	5%	1/10W
R825	1-216-089-00	METAL CHIP	47K	5%	1/10W
R826	1-216-121-00	METAL CHIP	1M	5%	1/10W
R827	1-216-011-00	METAL CHIP	27	5%	1/10W
R828	1-216-049-00	METAL CHIP	1K	5%	1/10W
R829	1-216-089-00	METAL CHIP	47K	5%	1/10W
R830	1-216-097-00	METAL CHIP	100K	5%	1/10W
R831	1-216-081-00	METAL CHIP	22K	5%	1/10W
R832	1-216-081-00	METAL CHIP	22K	5%	1/10W
R833	1-216-021-00	METAL CHIP	68	5%	1/10W
R834	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R835	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R836	1-216-025-00	METAL CHIP	100	5%	1/10W
R837	1-216-089-00	METAL CHIP	47K	5%	1/10W
R838	1-216-049-00	METAL CHIP	1K	5%	1/10W

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV781	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV782	1-230-871-21	RES, ADJ, METAL GLAZE 22K	

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*A-7060-627-A FC-10P BOARD, COMPLETE
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3-712-106-01 REINFORCEMENT (333)

CAPACITOR

Ref.No	Part No.	Description		
C601	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V
C602	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C603	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V
C604	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C605	1-162-638-11	CERAMIC CHIP 1MF		16V
C606	1-135-088-21	TANTAL. CHIP 2.2MF	20%	20V
C607	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C608	1-162-638-11	CERAMIC CHIP 1MF		16V
C609	1-162-638-11	CERAMIC CHIP 1MF		16V
C610	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V
C611	1-135-088-21	TANTAL. CHIP 2.2MF	20%	20V
C612	1-135-070-00	TANTAL. CHIP 0.1MF	20%	35V
C613	1-135-092-21	TANTAL. CHIP 3.3MF	20%	16V
C614	1-162-638-11	CERAMIC CHIP 1MF		16V
C615	1-163-263-00	CERAMIC CHIP 330PF	5%	50V
C616	1-163-263-00	CERAMIC CHIP 330PF	5%	50V
C617	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C618	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V
C619	1-163-119-00	CERAMIC CHIP 120PF	5%	50V

CONNECTOR

Ref.No	Part No.	Description
CN601	*1-564-020-00	PIN, CONNECTOR 10P

When indicating parts by reference number, please include the board name.

TRIMMER

Ref.No	Part No.	Description	Remark
CT601	1-141-331-11	CAP, VAR, TRIMMER (CHIP) (30PF)	

DIODE

Ref.No	Part No.	Description	Remark
D601	8-719-100-05	DIODE 1S2837	
D602	8-719-100-05	DIODE 1S2837	
D603	8-719-100-05	DIODE 1S2837	
D604	8-719-100-05	DIODE 1S2837	
D605	8-719-801-48	DIODE 1SS193	

IC

Ref.No	Part No.	Description	Remark
IC601	8-759-112-03	IC UPD7508G-769-00	
IC604	8-759-100-97	IC UPC339G2	
IC605	8-759-100-95	IC UPC324G2	
IC606	8-759-106-40	IC UPD4538BG	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q601	8-729-900-98	TRANSISTOR DTC143TK	
Q602	8-729-900-98	TRANSISTOR DTC143TK	
Q603	8-729-901-01	TRANSISTOR DTC144EK	
Q604	8-729-901-01	TRANSISTOR DTC144EK	
Q605	8-729-100-76	TRANSISTOR 2SA812	
Q606	8-729-100-76	TRANSISTOR 2SA812	
Q607	8-729-109-44	TRANSISTOR 2SK94	
Q608	8-729-100-76	TRANSISTOR 2SA812	
Q609	8-729-901-03	TRANSISTOR DTC144WK	
Q611	8-729-100-76	TRANSISTOR 2SA812	
Q612	8-729-900-98	TRANSISTOR DTC143TK	
Q614	8-729-100-66	TRANSISTOR 2SC1623	
Q615	8-729-100-66	TRANSISTOR 2SC1623	
Q616	8-729-100-66	TRANSISTOR 2SC1623	
Q617	8-729-100-66	TRANSISTOR 2SC1623	
Q618	8-729-100-66	TRANSISTOR 2SC1623	
Q619	8-729-100-66	TRANSISTOR 2SC1623	
Q620	8-729-100-76	TRANSISTOR 2SA812	
Q621	8-729-100-76	TRANSISTOR 2SA812	
Q622	8-729-900-99	TRANSISTOR DTA144WK	

RESISTOR

Ref.No	Part No.	Description				Remark
R601	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R602	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R603	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R604	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R605	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R606	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R607	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R608	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R609	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R610	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R611	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R612	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R613	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R614	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R615	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R616	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R617	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R618	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R619	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R620	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R621	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R622	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R623	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R624	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R625	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R626	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R627	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R629	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R630	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R631	1-216-295-00	METAL CHIP	0	5%	1/10W	
R634	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R635	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R636	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R637	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R638	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R639	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R642	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R643	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R644	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R645	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R646	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R647	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R648	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R649	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R650	1-216-098-00	METAL CHIP	110K	5%	1/10W	
R651	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R652	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R653	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R654	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R655	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R656	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R657	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R658	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R659	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R660	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R661	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R662	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R663	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R664	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R665	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R667	1-216-295-00	METAL CHIP	0	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV601	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV602	1-230-874-11	RES, ADJ, METAL GLAZE 100K	

When indicating parts by reference number, please include the board name.

SWITCH

Ref.No	Part No.	Description	Remark
S601	1-554-371-31	SWITCH, TACT (NEXT)	
S602	1-554-371-31	SWITCH, TACT (-)	
S603	1-554-371-31	SWITCH, TACT (+)	
S604	1-554-371-31	SWITCH, TACT (TITLE CLEAR)	
S605	1-554-371-31	SWITCH, TACT (INTERVAL REC)	

CRYSTAL

Ref.No	Part No.	Description	Remark
X601	1-527-997-00	VIBRATOR, CRYSTAL	

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*A-7060-628-A CG-1P BOARD, COMPLETE
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Ref.No	Part No.	Description	Remark
	3-573-141-00	WASHER (B), THRUST	
	3-712-106-01	REINFORCEMENT (333)	

CAPACITOR

Ref.No	Part No.	Description	Remark
C671	1-124-222-00	ELECT 22MF 20% 6.3V	
C673	1-131-375-00	TANTALUM 4.7MF 10% 10V	
C674	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C675	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
C676	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C677	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C678	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C679	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN671	*1-564-008-61	PIN, CONNECTOR 9P	
CN672	*1-564-006-51	PIN, CONNECTOR 7P	

TRIMMER

Ref.No	Part No.	Description	Remark
CT671	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30PF	

IC

Ref.No	Part No.	Description	Remark
IC671	8-759-106-63	IC UPD74HC02G	
IC672	8-759-106-89	IC UPD74HC157G	
IC673	8-759-204-96	IC TC74HC04F	
IC675	8-759-107-89	IC UPD6105G-102	
IC676	8-759-107-89	IC UPD6105G-102	
IC677	8-759-106-96	IC UPD74HC174G	
IC678	8-759-106-96	IC UPD74HC174G	

COIL

Ref.No	Part No.	Description	Remark
L671	1-408-970-21	MICRO INDUCTOR 10UH	
L672	1-407-165-XX	MICRO INDUCTOR 47UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q671	8-729-901-06	TRANSISTOR DTA144EK	
Q672	8-729-100-66	TRANSISTOR 2SC1623	

RESISTOR

Ref.No	Part No.	Description	Remark
R671	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R672	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R673	1-216-295-00	METAL CHIP 0 5% 1/10W	
R674	1-216-031-00	METAL CHIP 180 5% 1/10W	
R675	1-216-054-00	METAL CHIP 1.6K 5% 1/10W	
R676	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R677	1-216-062-00	METAL CHIP 3.6K 5% 1/10W	
R678	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R679	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R680	1-216-062-00	METAL CHIP 3.6K 5% 1/10W	
R680	1-216-062-00	METAL CHIP 3.6K 5% 1/10W	
R681	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R682	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R683	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R684	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R685	1-216-295-00	METAL CHIP 0 5% 1/10W	
R686	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R687	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R688	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R689	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R690	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R697 ⚠	1-211-451-00	CARBON 1K 5% 1/8W	F
R698	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R699	1-216-295-00	METAL CHIP 0 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV671	1-230-226-00	RES, VAR, CARBON 10K (IRIS)	

SWITCH

Ref.No	Part No.	Description	Remark
S671	1-553-977-00	SWITCH, SLIDE (FOCUS MANU/AUTO)	
S672	1-554-945-12	SWITCH, SLIDE (WHITE BLANCE)	
S673	1-553-977-00	SWITCH, SLIDE (SENS HIGH/LOW)	
S674	1-554-364-00	SWITCH, SLIDE (CAMERA POWER SW)	

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*1-620-154-21 TI-8P BOARD
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DIODE

Ref.No	Part No.	Description	Remark
D691	8-719-918-66	DIODE GL-1HY102 (INTERVAL)	
D692	8-719-918-67	DIODE GL-1EG102 (CAMERA)	
D693	8-719-100-05	DIODE 1S2837	
D694	8-719-100-05	DIODE 1S2837	
D695	8-719-100-05	DIODE 1S2837	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q691	8-729-903-29	TRANSISTOR DTA144TK	

RESISTOR

Ref.No	Part No.	Description	Remark
R691	1-216-049-00	METAL CHIP 1K 5% 1/10W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R692	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R693	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R694	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R695	1-216-295-00	METAL CHIP	0	5%	1/10W	
R696	1-216-295-00	METAL CHIP	0	5%	1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S691	1-554-371-31	SWITCH, TACT (FOCUS PUSH AUTO)	
S692	1-554-371-31	SWITCH, TACT (MAIN)	
S693	1-554-371-31	SWITCH, TACT (SUB)	
S694	1-554-371-31	SWITCH, TACT (DATE)	
S695	1-554-371-31	SWITCH, TACT (TIME)	
S696	1-554-371-31	SWITCH, TACT (FADER/WIPER)	
S697	1-554-371-31	SWITCH, TACT (REC/REVIEW)	

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Ref.No	Part No.	Description	Remark
	*A-7060-631-A	VF-7P BOARD, COMPLETE (AEP, Australian, E MODEL)	
	*A-7060-748-A	VF-7P BOARD, COMPLETE (UK MODEL)	

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Ref.No	Part No.	Description	Remark
	1-526-926-11	SOCKET ASSY, CRT	
	*3-662-075-00	COVER, CONTROL	
	*3-712-665-01	HOLDER, LED	

CAPACITOR

Ref.No	Part No.	Description				Remark
C701	1-123-618-00	ELECT	22MF	20%	6.3V	
C702	1-163-081-00	CERAMIC CHIP	0.22MF		25V	
C703	1-131-346-00	TANTALUM	0.68MF	10%	35V	
C704	1-124-224-00	ELECT	47MF	20%	6.3V	
C705	1-163-139-00	CERAMIC CHIP	820PF	10%	50V	
C706	1-163-081-00	CERAMIC CHIP	0.22MF		25V	
C707	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V	
C708	1-123-617-00	ELECT	10MF	20%	16V	
C709	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V	
C710	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C711	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C712	1-163-125-00	CERAMIC CHIP	220PF	10%	50V	
C713	1-124-442-00	ELECT	330MF	20%	6.3V	
C714	1-124-604-00	ELECT	330MF	20%	10V	
C715	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C716	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V	
C717	1-123-611-00	ELECT	1MF	20%	50V	
C718	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V	
C719	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V	
C720	1-163-189-00	CERAMIC CHIP	220PF	10%	50V	
C721	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C722	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V	
C723	1-123-613-00	ELECT	3.3MF	20%	50V	
C724	1-162-146-00	CERAMIC	0.001MF		1KV	
C725	1-102-038-00	CERAMIC	0.001MF	99%	500V	
C726	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C727	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN701	*1-564-004-00	PIN, CONNECTOR 5P	
CN702	*1-564-001-11	PIN, CONNECTOR 2P	
CN703	*1-564-001-11	PIN, CONNECTOR 2P	

DIODE

Ref.No	Part No.	Description	Remark
D701	8-719-400-20	DIODE MA152WA	
D702	8-719-801-48	DIODE 1SS193	
D703	8-719-801-45	DIODE 1SS187	
D704	8-719-800-24	DIODE TLR147 (TALLY)	

IC

Ref.No	Part No.	Description	Remark
IC701	8-759-403-49	IC AN2510S	

COIL

Ref.No	Part No.	Description	Remark
L701	1-407-167-XX	MICRO INDUCTOR 68UH	
L702	1-459-683-11	COIL, FERRITE (HLC)	
L703	1-407-161-XX	MICRO INDUCTOR 22UH	

IC LINK

Ref.No	Part No.	Description	Remark
PS701⚠	1-532-833-21	LINK, IC 250mA (UK MODEL)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q701	8-729-100-66	TRANSISTOR 2SC1623	
Q702	8-729-162-44	TRANSISTOR 2SB624-BV4	
Q703	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q704	8-729-106-64	TRANSISTOR 2SD1615	

RESISTOR

Ref.No	Part No.	Description				Remark
R701	1-216-306-11	METAL CHIP	3.9	5%	1/10W	
R702	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R703	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R704	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R705	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R706	1-216-017-00	METAL CHIP	47	5%	1/10W	
R707	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R708	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R709	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R710	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R711	1-216-228-00	METAL CHIP	18K	5%	1/8W	
R712	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R713	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R714	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R715	1-216-041-00	METAL CHIP	470	5%	1/10W	
R716	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R717	1-216-222-00	METAL CHIP	10K	5%	1/8W	
R718	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R720	1-216-131-11	METAL CHIP	2.7M	5%	1/10W	
R721	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R722	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R723	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R726	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R740	1-216-296-00	METAL CHIP	0	5%	1/8W	
R741	1-216-296-00	METAL CHIP	0	5%	1/8W	
R742	1-216-295-00	METAL CHIP	0	5%	1/10W	
R743	1-216-296-00	METAL CHIP	0	5%	1/8W	

(AEP, Australian, E MODEL)

Ref.No	Part No.	Description			
R744	1-216-296-00	METAL CHIP	0	5%	1/8W
R745	1-216-296-00	METAL CHIP	0	5%	1/8W
R746	1-216-295-00	METAL CHIP	0	5%	1/10W
R747	1-216-295-00	METAL CHIP	0	5%	1/10W
R748	1-216-295-00	METAL CHIP	0	5%	1/10W

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV701	1-226-925-00	RES, ADJ, SOLID 220
RV702	1-226-708-00	RES, ADJ, SOLID 2.2K
RV703	1-226-711-00	RES, ADJ, SOLID 22K
RV704	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M
RV705	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M

TRANSFORMER

Ref.No	Part No.	Description
T701	⚠ 1-439-394-11	TRANSFORMER ASSY, FLYBACK

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*A-7060-632-A EM-1P BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description			
C401	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C402	1-163-074-00	CERAMIC CHIP	0.033MF	10%	25V
C403	1-163-074-00	CERAMIC CHIP	0.033MF	10%	25V
C405	1-123-661-00	ELECT	100MF	20%	6.3V
C406	1-123-647-00	ELECT	47MF	20%	6.3V
C407	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C408	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C409	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C410	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C411	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C412	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C901	1-124-287-00	ELECT	10MF	20%	10V
C902	1-124-287-00	ELECT	10MF	20%	10V
C903	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C904	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C905	1-163-121-00	CERAMIC CHIP	150PF	5%	50V

CONNECTOR

Ref.No	Part No.	Description
CN401	*1-564-003-00	PIN, CONNECTOR 4P
CN402	1-564-002-00	PIN, CONNECTOR 3P
CN901	*1-564-001-11	PIN, CONNECTOR 2P
CN902	*1-564-001-11	PIN, CONNECTOR 2P
CN903	*1-564-001-11	PIN, CONNECTOR 2P
CN904	*1-564-004-00	PIN, CONNECTOR 5P
CN905	*1-564-002-00	PIN, CONNECTOR 3P
CN906	*1-564-001-11	PIN, CONNECTOR 2P

DIODE

Ref.No	Part No.	Description	Remark
D401	8-719-106-53	DIODE RD10M-B2	
D403	8-719-801-48	DIODE 1SS193	

JACK

Ref.No	Part No.	Description
J401	1-563-454-11	JACK, MINIATURE (DC OUT)
J402	1-507-921-00	JACK (EXT MIC)

COIL

Ref.No	Part No.	Description
L901	1-408-958-21	MICRO INDUCTOR 1UH
L902	1-408-958-21	MICRO INDUCTOR 1UH

TRANSISTOR

Ref.No	Part No.	Description
0401	8-729-100-66	TRANSISTOR 2SC1623
Q402	8-729-100-66	TRANSISTOR 2SC1623
0901	8-729-901-01	TRANSISTOR DTC144EK
Q902	8-729-100-66	TRANSISTOR 2SC1623
Q903	8-729-100-66	TRANSISTOR 2SC1623
Q905	8-729-901-01	TRANSISTOR DTC144EK
Q906	8-729-901-01	TRANSISTOR DTC144EK

RESISTOR

Ref.No	Part No.	Description			
R401	1-216-073-00	METAL CHIP	10K	5%	1/10W
R402	1-216-095-00	METAL CHIP	82K	5%	1/10W
R403	1-216-097-00	METAL CHIP	100K	5%	1/10W
R404	1-216-081-00	METAL CHIP	22K	5%	1/10W
R405	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R406	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R407	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R408	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R409	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R410	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R901	1-216-049-00	METAL CHIP	1K	5%	1/10W
R902	1-216-077-00	METAL CHIP	15K	5%	1/10W
R903	1-216-087-00	METAL CHIP	39K	5%	1/10W
R904	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R906	1-216-077-00	METAL CHIP	15K	5%	1/10W
R907	1-216-087-00	METAL CHIP	39K	5%	1/10W
R908	1-216-089-00	METAL CHIP	47K	5%	1/10W
R909	1-216-049-00	METAL CHIP	1K	5%	1/10W
R910	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R911	1-216-018-00	METAL CHIP	51	5%	1/10W

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*A-7060-616-A SS-64P BOARD, COMPLETE
(AEP, AUSTRALIAN, E MODEL)
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*A-7060-702-A SS-64P BOARD, COMPLETE (UK MODEL)
****

Ref.No	Part No.	Description
	2-279-715-21	RIVET, NYLON
	3-712-398-01	REINFORCEMENT (31)

CAPACITOR

Ref.No	Part No.	Description	
C301	1-163-077-00	CERAMIC CHIP 0.1MF	50V

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C302	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C303	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C304	1-124-234-00	ELECT	22MF	20%	16V
C305	1-124-257-00	ELECT	2.2MF	20%	35V
C306	1-124-233-00	ELECT	10MF	20%	10V
C307	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C308	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C309	1-135-099-00	TANTAL. CHIP	2.2MF	20%	6.3V
C311	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C312	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C313	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C314	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C315	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C316	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C318	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C321	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C322	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C323	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C325	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C327	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C329	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C330	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C331	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C332	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C333	1-161-057-00	CERAMIC	0.033MF	10%	25V
C334	1-135-099-00	TANTAL. CHIP	2.2MF	20%	6.3V
C335	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C336	1-161-025-00	CERAMIC	0.1MF	10%	25V
C337	1-161-055-00	CERAMIC	0.022MF	10%	25V
C501	1-124-222-00	ELECT	22MF	20%	6.3V
C502	1-124-257-00	ELECT	2.2MF	20%	35V
C503	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C504	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C505	1-124-233-00	ELECT	10MF	20%	6.3V
C506	1-163-020-00	CERAMIC CHIP	0.0082MF	10%	50V
C507	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C508	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C509	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C510	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C511	1-124-499-11	ELECT	1MF	20%	50V
C513	1-124-233-00	ELECT	10MF	20%	6.3V
C514	1-126-099-11	ELECT	2.2MF	20%	35V
C516	1-126-100-11	ELECT	10MF	20%	6.3V
C518	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C519	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C520	1-163-692-11	CERAMIC CHIP	0.0015MF	5%	50V
C521	1-163-692-11	CERAMIC CHIP	0.0015MF	5%	50V
C524	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C525	1-126-099-11	ELECT	2.2MF	20%	35V
C527	1-124-499-11	ELECT	1MF	20%	50V
C529	1-126-099-11	ELECT	2.2MF	20%	35V
C531	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V
C532	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C533	1-124-233-00	ELECT	10MF	20%	10V
C536	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C537	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C540	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C541	1-124-499-11	ELECT	1MF	20%	50V
C543	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C544	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C545	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C546	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C547	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C548	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C549	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C550	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C553	1-124-222-00	ELECT	22MF	20%	6.3V
C554	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C555	1-124-233-00	ELECT	10MF	20%	6.3V
C556	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C557	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C558	1-124-258-00	ELECT	3.3MF	20%	25V
C559	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C560	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C562	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C563	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C564	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C651	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V
C652	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V
C653	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C654	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C655	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C656	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C657	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C658	1-124-233-00	ELECT	10MF	20%	6.3V
C659	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C660	1-163-033-00	CERAMIC CHIP	0.022MF	10%	25V
C661	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C662	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C663	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C664	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C665	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C666	1-163-034-00	CERAMIC CHIP	0.033MF	10%	25V
C667	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C669	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C670	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C671	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
		CONNECTOR			
CN301	*1-564-029-00	PIN, CONNECTOR 4P			
CN302	*1-564-013-00	PIN, CONNECTOR 3P			
CN303	*1-564-013-00	PIN, CONNECTOR 3P			
CN304	*1-564-012-00	PIN, CONNECTOR 2P			
CN305	*1-564-014-00	PIN, CONNECTOR 4P			
CN306	*1-564-012-00	PIN, CONNECTOR 2P			
CN307	*1-562-887-11	CONNECTOR, F.P.C 20P			

When indicating parts by reference number, please include the board name.

SS-64P

Ref.No	Part No.	Description	Remark
CN308	*1-564-020-00	PIN, CONNECTOR 10P	
CN309	1-563-492-11	CONNECTOR, F.P.C 19P	
CN310	*1-564-014-00	PIN, CONNECTOR 4P	
CN311	*1-564-003-00	PIN, CONNECTOR 4P	
CN313	*1-564-016-00	PIN, CONNECTOR 6P	
CN314	*1-564-012-00	PIN, CONNECTOR 2P	
CN501	1-563-492-11	CONNECTOR, F.P.C 19P	
		DIODE	
D301	8-719-100-03	DIODE 1S2835	
D303	8-719-914-11	DIODE HZ4ALL	
D304	8-719-914-11	DIODE HZ4ALL	
D305	8-719-100-03	DIODE 1S2835	
D501	8-719-101-23	DIODE 1SS123	
D505	8-719-801-41	DIODE 1SS196	
D651	8-719-801-41	DIODE 1SS196	
		FILTER	
FL501	1-235-612-21	BPF (16KHZ)	
FL502	1-235-611-21	BPF (46KHZ)	
		IC	
IC301	8-752-801-11	IC CXP5048H-031Q	
IC302	8-752-801-12	IC CXP5048H-040Q	
IC303	8-759-925-43	IC MSM6411B-26GS-VK	
IC304	8-759-100-93	IC UPC393G2	
IC305	8-759-922-54	IC S-81250AG	
IC306	8-759-913-41	IC S-8054ALB	
IC307	8-759-100-92	IC UPC4250G2	
IC501	8-759-107-68	IC CX20115A	
IC502	8-752-003-50	IC CX20035	
IC504	8-759-701-36	IC NJM3403AM	
IC505	8-759-925-66	IC BA6303F	
IC506	8-759-201-01	IC TC4066BF	
IC507	8-759-201-00	IC TC4052BF	
IC508	8-759-201-80	IC TC4526BF	
IC509	8-759-928-56	IC CXA1042M	
IC651	8-759-100-93	IC UPC393G2	
		COIL	
L301	1-408-987-21	MICRO INDUCTOR 330UH	
L302	1-408-795-21	INDUCTOR CHIP 330UH	
L303	1-408-795-21	INDUCTOR CHIP 330UH	
L304	1-410-389-11	INDUCTOR CHIP 47UH	
L501	1-407-165-XX	MICRO INDUCTOR 47UH	
L502	1-408-987-21	MICRO INDUCTOR 330UH	
L503	1-408-948-00	MICRO INDUCTOR 220UH	
		IC LINK	
PS301⚠	1-532-605-11	LINK, IC	

Ref.No	Part No.	Description	Remark
		TRANSISTOR	
Q301	8-729-900-98	TRANSISTOR DTC143TK	
Q302	8-729-900-98	TRANSISTOR DTC143TK	
Q303	8-729-900-98	TRANSISTOR DTC143TK	
Q304	8-729-901-06	TRANSISTOR DTA144EK	
Q305	8-729-901-06	TRANSISTOR DTA144EK	
Q306	8-729-901-04	TRANSISTOR DTA114EK	
Q307	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q308	8-729-901-01	TRANSISTOR DTC144EK	
Q309	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q310	8-729-901-01	TRANSISTOR DTC144EK	
Q311	8-729-900-98	TRANSISTOR DTC143TK	
Q312	8-729-901-06	TRANSISTOR DTA144EK	
Q313	8-729-900-98	TRANSISTOR DTC143TK	
Q314	8-729-901-06	TRANSISTOR DTA144EK	
Q315	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q316	8-729-100-76	TRANSISTOR 2SA812	
Q317	8-729-105-29	TRANSISTOR 2SA1385	
Q318	8-729-901-06	TRANSISTOR DTA144EK	
Q319	8-729-901-06	TRANSISTOR DTA144EK	
Q320	8-729-901-01	TRANSISTOR DTC144EK	
Q321	8-729-901-01	TRANSISTOR DTC144EK	
Q322	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q323	8-729-100-76	TRANSISTOR 2SA812	
Q324	8-729-901-06	TRANSISTOR DTA144EK	
Q325	8-729-901-01	TRANSISTOR DTC144EK	
Q326	8-729-901-01	TRANSISTOR DTC144EK	
Q329	8-729-901-01	TRANSISTOR DTC144EK	
Q331	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q332	8-729-901-06	TRANSISTOR DTA144EK	
Q333	8-729-901-01	TRANSISTOR DTC144EK	
Q334	8-729-100-76	TRANSISTOR 2SA812	
Q335	8-729-100-66	TRANSISTOR 2SC1623	
Q336	8-729-900-89	TRANSISTOR DTA144ES	
Q501	8-729-100-76	TRANSISTOR 2SA812	
Q502	8-729-903-29	TRANSISTOR DTA144TK	
Q504	8-729-100-76	TRANSISTOR 2SA812	
Q505	8-729-100-76	TRANSISTOR 2SA812	
Q506	8-729-100-66	TRANSISTOR 2SC1623	
Q507	8-729-100-66	TRANSISTOR 2SC1623	
Q508	8-729-901-06	TRANSISTOR DTA144EK	
Q509	8-729-100-76	TRANSISTOR 2SA812	
Q510	8-729-901-06	TRANSISTOR DTA144EK	
Q511	8-729-901-01	TRANSISTOR DTC144EK	
Q512	8-729-901-01	TRANSISTOR DTC144EK	
Q513	8-729-901-01	TRANSISTOR DTC144EK	
Q514	8-729-100-66	TRANSISTOR 2SC1623	
Q515	8-729-903-29	TRANSISTOR DTA144TK	
Q516	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q517	8-729-100-76	TRANSISTOR 2SA812	
Q518	8-729-100-67	TRANSISTOR 2SC1623-L7	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q519	8-729-100-76	TRANSISTOR 2SA812	
Q520	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q521	8-729-199-92	TRANSISTOR 2SD999	
Q522	8-729-199-92	TRANSISTOR 2SD999	
Q523	8-729-901-06	TRANSISTOR DTA144EK	
Q524	8-729-901-01	TRANSISTOR DTC144EK	
Q525	8-729-901-06	TRANSISTOR DTA144EK	
Q526	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q651	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q652	8-729-100-76	TRANSISTOR 2SA812	
Q653	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q654	8-729-100-76	TRANSISTOR 2SA812	
Q655	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q656	8-729-100-76	TRANSISTOR 2SA812	
Q657	8-729-901-06	TRANSISTOR DTA144EK	

RESISTOR

Ref.No	Part No.	Description				Remark
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R303	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R304	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R305	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R306	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R307	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R308	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R310	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R312	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R313	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R314	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R315	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R317	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R318	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R319	1-216-041-00	METAL CHIP	470	5%	1/10W	
R320	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R321	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R322	1-216-045-00	METAL CHIP	680	5%	1/10W	
R323	1-216-194-00	METAL CHIP	680	5%	1/8W	
R324	1-216-194-00	METAL CHIP	680	5%	1/8W	
R325	1-216-194-00	METAL CHIP	680	5%	1/8W	
R326	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R327	1-216-123-11	METAL CHIP	1.2M	5%	1/10W	
R328	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R329	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R330	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R331	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R332	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R333	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R334	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R335	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R336	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R337	1-216-047-00	METAL CHIP	820	5%	1/10W	
R338	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R339	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R340	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R341	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R342	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R343	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R344	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R345	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R346	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R347	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R348	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R349	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R350	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R351	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R353	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R354	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R355	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R356	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R357	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R359	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R360	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R361	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R362	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R363	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R364	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R365	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R366	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R367	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R368	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R369	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R370	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R371	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R373	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R375	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R376	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R377	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R378	1-216-174-00	METAL CHIP	100	5%	1/8W	
R379	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R381	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R383	1-216-295-00	METAL CHIP	0	5%	1/10W	
R385	1-216-295-00	METAL CHIP	0	5%	1/10W	
R387	1-216-295-00	METAL CHIP	0	5%	1/10W	
R389	1-216-295-00	METAL CHIP	0	5%	1/10W	
R390	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R392	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R393	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R394	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R395	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R396	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R397	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R398	1-216-295-00	METAL CHIP	0	5%	1/10W	

When indicating parts by reference number, please include the board name.

SS-64P

Ref.No	Part No.	Description				Remark
R399	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R501	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R502	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R503	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R504	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R505	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R506	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R507	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R508	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R509	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R510	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R511	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R512	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R513	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R514	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R515	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R516	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R517	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R518	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R519	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R520	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R521	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R522	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R523	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R524	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R525	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R526	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R527	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R528	1-216-182-00	METAL CHIP	220	5%	1/8W	
R529	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R530	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R531	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R532	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R534	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R535	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R536	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R537	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R538	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R539	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R540	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R541	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R542	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R543	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R544	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R545	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R546	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R547	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R548	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R549	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R550	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R552	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R553	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R554	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R555	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R556	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R557	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R558	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R559	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R560	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R561	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R562	1-216-295-00	METAL CHIP	0	5%	1/10W	
R563	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R566	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R567	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R568	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R569	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R570	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R571	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R572	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R573	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R574	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R575	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R576	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R577	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R578	1-216-047-00	METAL CHIP	820	5%	1/10W	
R579	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R580	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R581	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R582	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R583	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R584	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R585	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R586	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R587	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R588	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R589	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R590	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R591	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R593	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R594	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R599	1-216-295-00	METAL CHIP	0	5%	1/10W	
R651	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R652	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R653	1-216-047-00	METAL CHIP	820	5%	1/10W	
R654	1-216-015-00	METAL CHIP	39	5%	1/10W	
R655	1-216-029-00	METAL CHIP	150	5%	1/10W	
R656	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R657	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R658	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R659	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R660	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R661	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R662	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R663	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R664	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R665	1-216-073-00	METAL CHIP	10K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R666	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R667	1-216-295-00	METAL CHIP	0	5%	1/10W	
R668	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R669	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R670	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R671	1-216-045-00	METAL CHIP	680	5%	1/10W	
R672	1-216-027-00	METAL CHIP	120	5%	1/10W	
R673	1-216-047-00	METAL CHIP	820	5%	1/10W	
R674	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R675	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R676	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R677	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R678	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R679	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R680	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R681	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R682	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R683	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R684	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R685	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R686	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R687	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R688	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R689	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R691	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R695	1-247-889-00	CARBON	270K	5%	1/6W	
R696	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R697	1-249-429-11	CARBON	10K	5%	1/6W	

VARIABLE RESISTOR

RV301	1-230-867-11	RES, ADJ, METAL GLAZE 1K
RV501	1-230-874-11	RES, ADJ, METAL GLAZE 100K
RV502	1-230-873-11	RES, ADJ, METAL GLAZE 47K

CRYSTAL

X301	1-567-346-11	OSCILLATOR, CERAMIC (5MHZ)
X302	1-567-346-11	OSCILLATOR, CERAMIC (5MHZ)
X303	1-567-192-11	OSCILLATOR, CERAMIC (4MHZ)

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*A-7060-494-A DR-36P BOARD, COMPLETE

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CAPACITOR

C501	1-124-255-00	ELECT	1MF	20%	50V
C502	1-124-255-00	ELECT	1MF	20%	50V
C503	1-124-255-00	ELECT	1MF	20%	50V
C504	1-124-258-00	ELECT	3.3MF	20%	25V
C505	1-124-255-00	ELECT	1MF	20%	50V
C506	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C507	1-163-077-00	CERAMIC CHIP	0.1MF		50V

Ref.No	Part No.	Description			Remark
C508	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C509	1-126-099-11	ELECT	2.2MF	20%	35V
C511	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C512	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C513	1-124-577-11	ELECT	82MF	20%	10V
C514	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C515	1-124-577-11	ELECT	82MF	20%	10V
C516	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C517	1-124-233-00	ELECT	10MF	20%	16V
C518	1-124-233-00	ELECT	10MF	20%	16V
C519	1-124-233-00	ELECT	10MF	20%	16V
C520	1-124-577-11	ELECT	82MF	20%	10V
C521	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C522	1-124-596-11	ELECT	27MF	20%	16V
C523	1-124-596-11	ELECT	27MF	20%	16V
C524	1-124-596-11	ELECT	27MF	20%	16V
C527	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V
C528	1-163-035-00	CERAMIC CHIP	0.047MF	10%	25V

CONNECTOR

CN312	*1-564-012-00	PIN, CONNECTOR 2P
CN504	*1-564-014-00	PIN, CONNECTOR 4P

DIODE

D501	8-719-200-35	DIODE E10QS03
D502	8-719-200-35	DIODE E10QS03
D503	8-719-200-35	DIODE E10QS03

IC

IC501	8-759-202-45	IC CX20114
IC502	8-752-003-60	IC CX20036

COIL

L501	1-410-628-11	COIL, CHOKE 200UH
L502	1-410-628-11	COIL, CHOKE 200UH
L503	1-410-628-11	COIL, CHOKE 200UH

TRANSISTOR

Q501	8-729-100-76	TRANSISTOR 2SA812
Q502	8-729-901-01	TRANSISTOR DTC144EK
Q503	8-729-100-76	TRANSISTOR 2SA812
Q504	8-729-100-67	TRANSISTOR 2SC1623-L7
Q505	8-729-106-40	TRANSISTOR 2SB1114-ZK
Q506	8-729-106-40	TRANSISTOR 2SB1114-ZK
Q507	8-729-700-10	NJL7141E-S

RESISTOR

R501	1-216-073-00	METAL CHIP	10K	5%	1/10W
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W
R503	1-216-085-00	METAL CHIP	33K	5%	1/10W
R504	1-216-081-00	METAL CHIP	22K	5%	1/10W
R505	1-216-047-00	METAL CHIP	820	5%	1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R506	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R507	1-216-025-00	METAL CHIP 100 5% 1/10W	
R508	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R509	1-216-041-00	METAL CHIP 470 5% 1/10W	
R510	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R511	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R512	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R513	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R514	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R515	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R516	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R517	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R518	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R519	1-216-025-00	METAL CHIP 100 5% 1/10W	
R520	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R521	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R522	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R523	1-214-972-00	METAL 0.22 5% 1/4W	
R524	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R525	1-216-041-00	METAL CHIP 470 5% 1/10W	
R526	1-216-041-00	METAL CHIP 470 5% 1/10W	
R527	1-216-304-11	METAL CHIP 3.3 5% 1/10W	
R528	1-216-304-11	METAL CHIP 3.3 5% 1/10W	
R530	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R534	1-216-295-00	METAL CHIP 0 5% 1/10W	

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*A-7060-617-A TS-55P BOARD, COMPLETE

CONNECTOR

CN506	*1-562-887-11	CONNECTOR, F.P.C 20P	
CN507	*1-564-018-11	PIN, CONNECTOR 8P	

TRANSISTOR

0501	8-729-700-10	NJL7141E-S	

RESISTOR

R501	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R502	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R505	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R506	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R507	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R508	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R510	1-216-295-00	METAL CHIP 0 5% 1/10W	
R512	1-216-295-00	METAL CHIP 0 5% 1/10W	

VARIABLE RESISTOR

RV501	1-230-528-11	RES, ADJ, METAL GLAZE 220K	
RV502	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV503	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV504	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV506	1-230-526-11	RES, ADJ, METAL GLAZE 47K	
RV507	1-230-528-11	RES, ADJ, METAL GLAZE 220K	
RV508	1-230-529-11	RES, ADJ, METAL GLAZE 470K	

****

*A-7070-024-A LD-1 BOARD, COMPLETE

DIODE

D901	8-719-928-54	DIODE GL-450S	

****

MS-4 BOARD

CAPACITOR

C901	1-163-038-00	CERAMIC CHIP 0.1MF	25V

CONNECTOR

CN905	1-564-671-31	PIN, CONNECTOR (HOOK TYPE)	

****

LS-9 BOARD

CONNECTOR

CN904	1-564-671-11	PIN, CONNECTOR (HOOK TYPE)	

****

*1-620-158-11 EP-8 BOARD

DIODE

D981	8-719-911-19	DIODE 1SS119	

JACK

J981	1-507-921-00	JACK (EARPHONE)	

COIL

L981	1-408-958-21	MICRO INDUCTOR 1UH	
L982	1-408-958-21	MICRO INDUCTOR 1UH	

****

*1-620-160-11 ZS-2 BOARD

CONNECTOR

CN951	*1-564-002-00	PIN, CONNECTOR 3P	
CN952	*1-564-003-00	PIN, CONNECTOR 4P	
CN953	*1-564-003-00	PIN, CONNECTOR 4P	
CN954	*1-564-002-00	PIN, CONNECTOR 3P	

When indicating parts by reference number, please include the board name.

GS-2 RJ-2P AS-13P LI-1

Ref.No	Part No.	Description	Remark
	*1-620-279-11	GS-2 BOARD	
		***********	
		SWITCH	
S921	1-570-689-11	SWITCH, KEY BOARD (START/STOP)	
************			
	*1-620-155-21	RJ-2P BOARD	
		************	
		CAPACITOR	
C931	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C932	1-163-021-00	CERAMIC CHIP 0.01MF	50V
		CONNECTOR	
CN931	1-562-589-11	SOCKET, DIN (SMALL TYPE) 5P	
		DIODE	
D931	8-719-106-71	DIODE RD12M-B2	
D932	8-719-106-71	DIODE RD12M-B2	
D933	8-719-106-71	DIODE RD12M-B2	
************			
	*1-620-145-21	AS-13P BOARD	
		*************	
		BALANCE SENSOR	
SB701	1-807-594-11	SENSOR, WB (WHITE BALANCE)	
************			
	*1-620-159-11	LI-1 BOARD	
		***********	
J961	1-550-104-21	HOLDER, BATTERY	

Ref.No	Part No.	Description	Remark
		ACCESSORIES AND PACKING MATERIALS	
		*********************************	
	3-696-079-01	BAG, PROTECTION	
	3-712-595-21	BELT, SHOULDER	
	*3-712-596-01	CUSHION (UPPER)	
	*3-712-597-01	CUSHION (LOWER)	
	3-714-016-01	PAT, SHOULDER	
	*3-764-461-01	INSTRUCTION (AEP MODEL)	
	3-765-608-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-765-608-41	MANUAL, INSTRUCTION (FRENCH, GERMAN, DUTCH) (AEP, E MODEL)	
	3-765-608-51	MANUAL, INSTRUCTION (SPANISH, SWEDISH, ITALIAN) (AEP, E MODEL)	
	3-765-608-61	MANUAL, INSTRUCTION (ARABIC) (E MODEL)	
************			
		MISCELLANEOUS	
		*************	
	A-7090-029-A	M-SW ASSY	
	X-3712-403-1	L-SW ASSY	
	1-535-535-11	TERMINAL, SHAFT GROUND	
	1-547-213-11	LENS, ZOOM (VCL-1206YG)	
	1-570-785-12	SWITCH, PUSH (ZOOM)	
	1-616-921-11	PC BOARD, FP-19 FLEXIBLE	
	1-807-744-11	DEW SENSOR	
	8-750-010-21	IU021-K-AA (CCD IMAGER BLOCK)	
	8-814-225-90	MICROPHONE C-2012	
DR901	1-464-704-11	CONVERTER UNIT, DC-DC(S)	
L901 ⚠	1-451-296-11	DEFLECTION YOKE (BLACK & WHITE) 640UH±5%	
M901	A-7040-031-A	MOTOR ASSY, L (LOADING)	
M902	8-835-196-01	MOTOR, DC BHF-2802A (CAPSTAN)	
M903	8-835-110-01	MOTOR, DC (DNR-5301A) (CONTROL)	
PM901 ⚠	1-454-377-21	SOLENOID, PLUNGER (BRAKE)	
S901	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK)	
S902	1-554-942-11	SWITCH, PUSH (RECOG)	
V901 ⚠	1-546-061-11	CATHODE-RAY TUBE, B/W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SECTION 7
CAMERA ADJUSTMENTS

During the adjustment, see the parts arrangement diagram relevant to the adjustment on page 280.

Pre-adjustment preparations (Camera block)

7-1. LIST OF SERVICING JIGS

- Oscilloscope
- AC adaptor (T/T unit)
- Adjusting screwdriver
- L wrench
- Colour monitor
- Vectorscope
- Regulated-DC power supply

Ref No.	Part name	Part No.	Use	Q'ty
J-1	Filter (W14)	J-6080-830-A	R gain, B gain adjustment	1
	Filter (C22)	J-6080-829-A	R gain, B gain adjustment	1
	Filter (Daylight)	J-6080-058-A	Outdoors white balance adjustment	1
J-2	ND filter 0.4	J-6080-806-A	IRIS setting adjustment, Max. gain adjustment, LLA adjustment	1
	ND filter 0.1	J-6080-807-A	IRIS setting adjustment, LLA adjustment	2
	ND filter 1.0	J-6080-808-A	LLA adjustment	1
	ND filter 0.9	J-6080-833-A	Max. gain adjustment, LLA adjustment	2
J-3	Pattern box PTB-100	J-6020-490-A		1
J-4	Pattern box color chart	J-6020-250-A		1
J-5	Extension cord (6P)	J-6080-861-A		1
	Extension cord (10P)	J-6080-862-A		1
	Extension cord (3P)	J-6080-863-A		1
	Extension cord (3P, shield wire is used)	J-6080-864-A		1

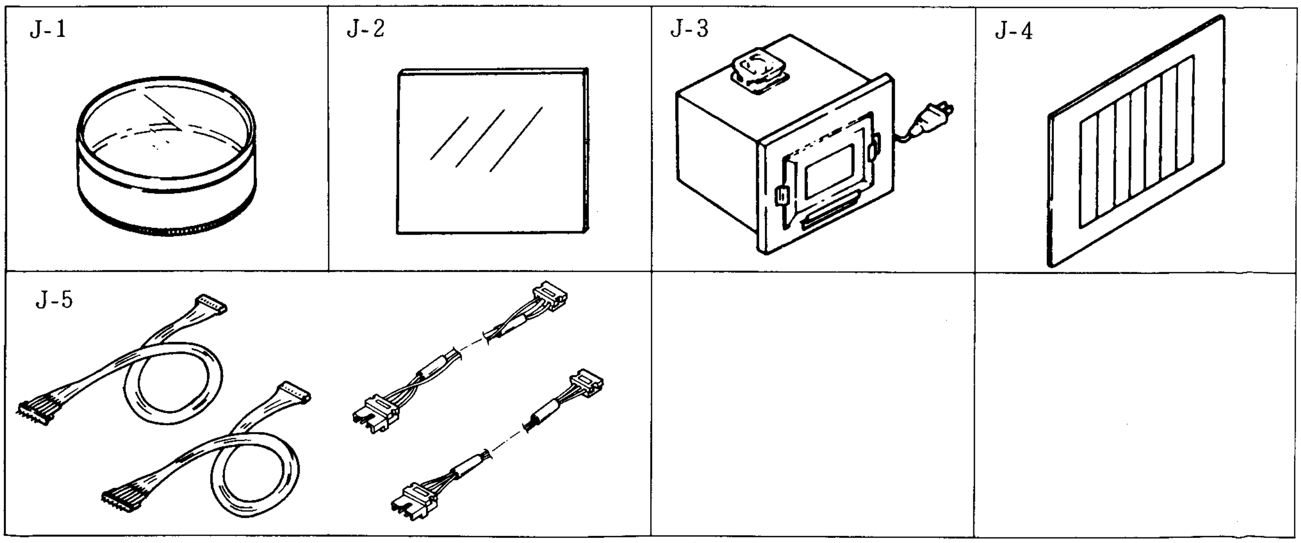
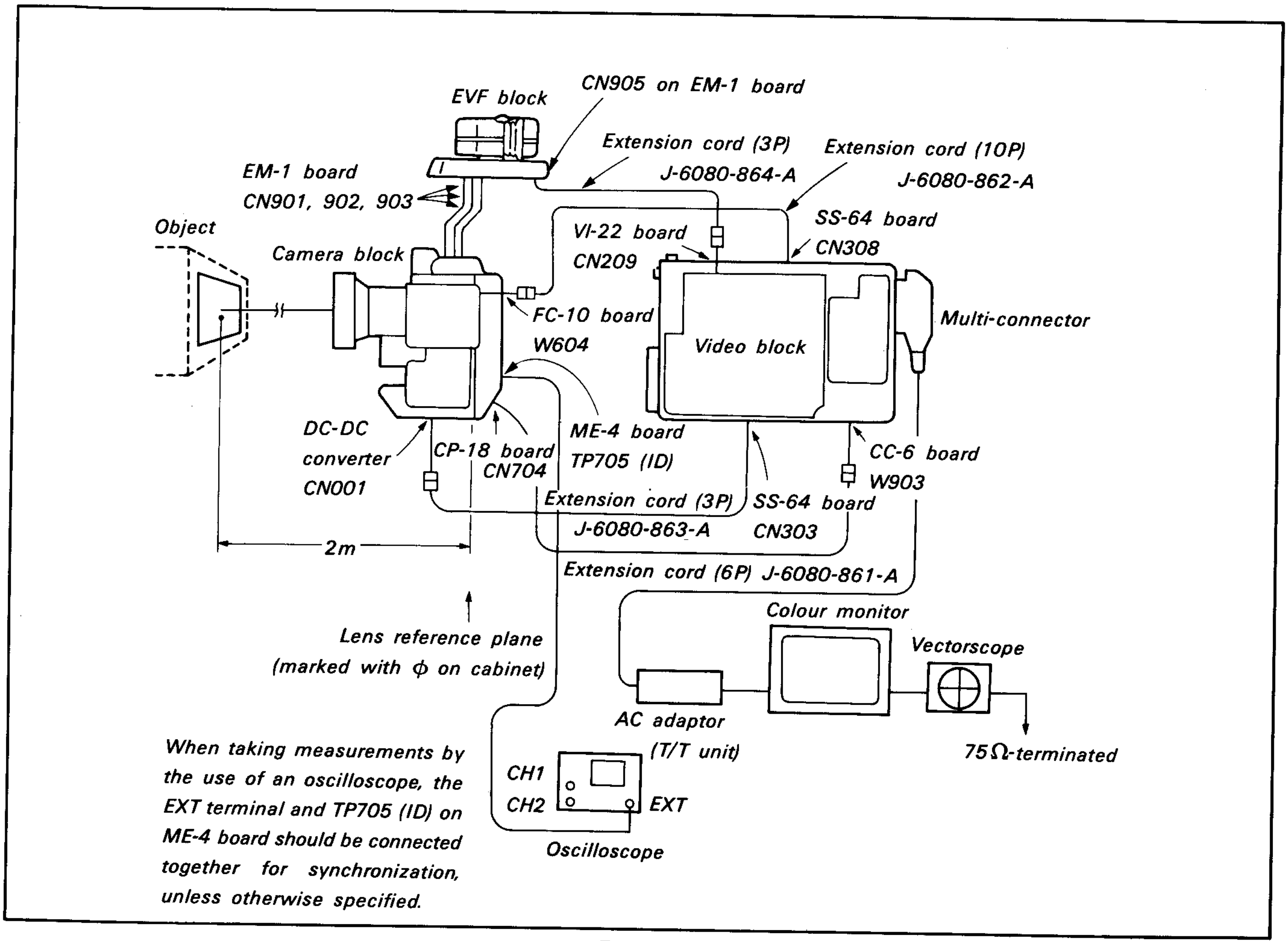


Fig. 7-1.


EVF block
CN905 on EM-1 board
Extension cord (3P)
J-6080-864-A
Extension cord (10P)
J-6080-862-A
EM-1 board
CN901, 902, 903
SS-64 board
CN308
Object
Camera block
VI-22 board
CN209
FC-10 board
W604
Video block
Multi-connector
ME-4 board
TP705 (ID)
DC-DC converter
CN001
CP-18 board
CN704
CC-6 board
W903
Extension cord (3P)
J-6080-863-A
SS-64 board
CN303
2m
Extension cord (6P) J-6080-861-A
Lens reference plane
(marked with ϕ on cabinet)
Colour monitor
Vectorscope
AC adaptor
(T/T unit)
75Ω-terminated
CH1
CH2
EXT
Oscilloscope

When taking measurements by the use of an oscilloscope, the EXT terminal and TP705 (ID) on ME-4 board should be connected together for synchronization, unless otherwise specified.

Fig. 7-2.

7-2. PREPARATIONS

Note: For details of the cabinet and individual boards removal procedure, refer to Section 2. DISASSEMBLY.

1) Remove cabinet (L) and cabinet (R).
   Before removing cabinet (R), disconnect CN951 and CN952 on ZS-2 board of grip block, and CN601 on FC-10 board of camera block.
2) Separate camera block from video block.
   1. Disconnect CN403, CN404 and CN406 on AU-25 board of video block.
   2. Disconnect CN704 on CP-18 board of camera block, and connect extension cord (6P).
   3. Disconnect CN303 on SS-64 board of video block, and connect extension cord (3P).
   4. Disconnect CN308 on SS-64 board of video block, and connect extension cord (10P).
   5. Disconnect CN905 on EM-1 board of EVF (electronic view finder) block, and connect extension cord (3P, shield wire is used). (This connection is required only when adjusting EVF block.)
3) When EVF (electronic view finder) block is unnecessary, remove it off the camera block. The EVF block is required for the following adjustments or checks:
   1. Camera DC-DC converter voltage check
   2. LLA adjustment
   3. EVF block adjustment

   Before removing EVF block off the camera block, first disconnect CN901, CN902 and CN903 on EM-1 board and chassis ground line of camera block.

7-3. CAUTION

1) Switch settings
   Unless otherwise specified, employ the following switch and control settings in making adjustments:
   1. FOCUS switch (S671 on CG-1 board) ... AUTO
   2. WHITE BALANCE switch (S672 on CG-1 board) ... INDOOR (☼)
   3. SENS switch (S673 on CG-1 board) ... NORMAL
   4. IRIS control (RV671 on CG-1 board) ... Center click position (AUTO)

2) Adjusting order
   As a rule, observe the order specified.

3) Objects
   1. Colour bar chart (Standard picture frame)
      When making adjustments by the use of a colour bar chart, first adjust image frame as shown in Fig. 7-3 (standard picture frame).

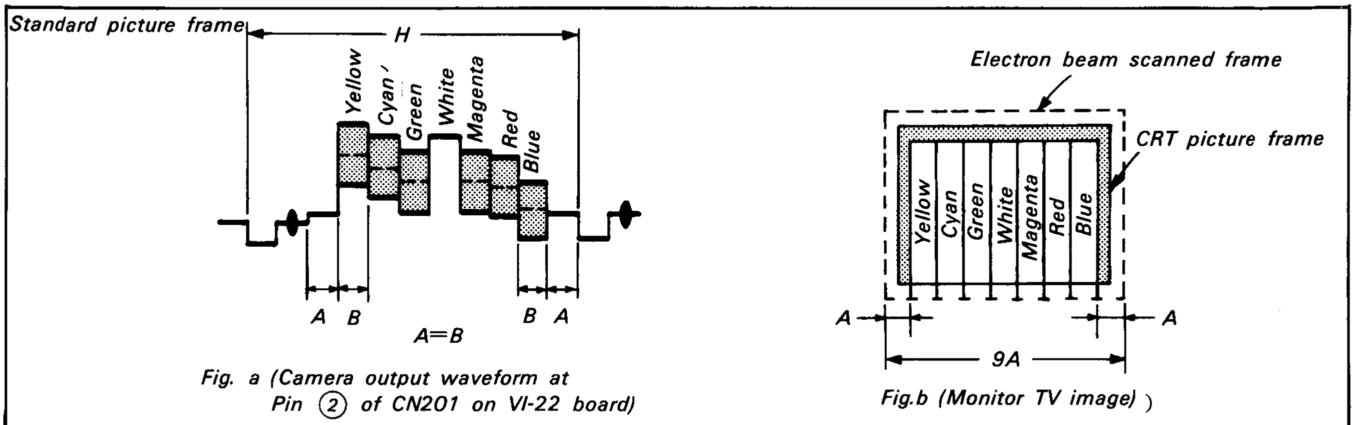

Standard picture frame
H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
B
A=B
B
A
Electron beam scanned frame
CRT picture frame
Yellow
Cyan
Green
White
Magenta
Red
Blue
A
A
9A

Fig. a (Camera output waveform at Pin ② of CN201 on VI-22 board)

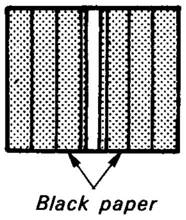
Fig.b (Monitor TV image))

By operating the camera zooming and orientation, have the Fig.a output waveform output and the Fig.b monitor TV image displayed.

Fig. 7-3.

2. Totally white pattern
   Remove color bar chart off pattern box, and set zoom lever at its extreme TELE position (72 mm).
3. High luminance pattern
   Prepare a high luminance pattern as shown in Fig. 7-4 and adjust picture frame as shown in Fig. 7-5.
4. Siemens star and sign chart
   Orient camera to have the pattern center coincide with the monitor screen center on a monitor TV screen.

High luminance pattern


Black paper

Cover a colour bar chart with black paper, except half the width of its white stripe. Then, shoot the chart in this state.

Fig. 7-4.

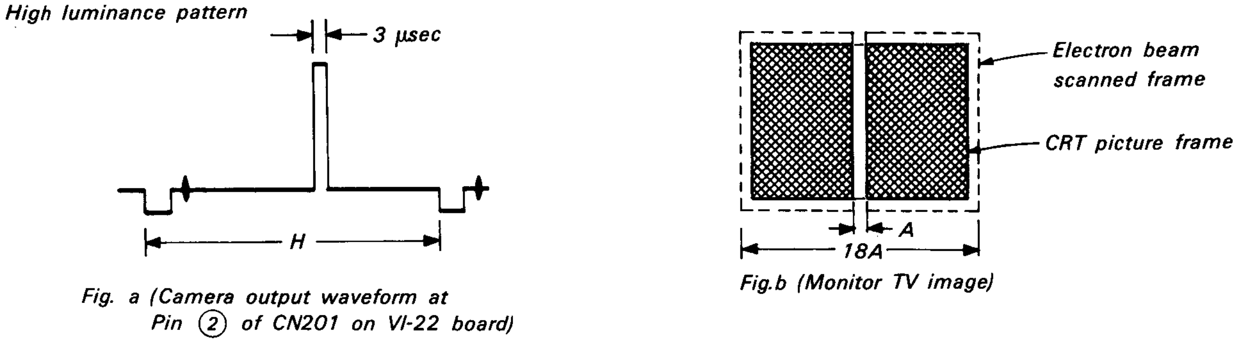

High luminance pattern
3 µsec
H
Electron beam scanned frame
CRT picture frame
A
18A

Fig. a (Camera output waveform at Pin ② of CN201 on VI-22 board)

Fig.b (Monitor TV image)

By operating the camera zooming and orientation, have the Fig.a output waveform output and the Fig.b monitor TV image displayed.

Fig. 7-5.

7-4. CAMERA SYSTEM ADJUSTMENT

7-4-1. Flange Back Adjustment

Object	Siemens star (At 2m directly in front of lens reference plane ("ϕ" marked))
Measurement Point	Check with a monitor TV
Measuring Instrument	
Adjusting Element	Flange back adjusting pin
Tools	L wrench (1.5 mm) and flat blade (−) screwdriver

Adjusting method:

1) Set FOCUS switch (S671 on CG-1 board) at its MANUAL position.
2) Set IRIS control (RV671 on CG-1 board) at its OPEN position.
3) Position a Siemens star 2m directly in front of lens reference plane.
4) Orient camera block to have the center of the Siemens star imaged on the monitor TV screen coincide with the monitor screen center.
5) Check to assure the smooth motion of zoom lever to both its extreme WIDE position (12 mm) and TELE position (72 mm), and then set it at the extreme WIDE position. (In this process, also check the monitor image to assure its due zooming operation.)
6) Set the lens focusing mark at the center of "2".

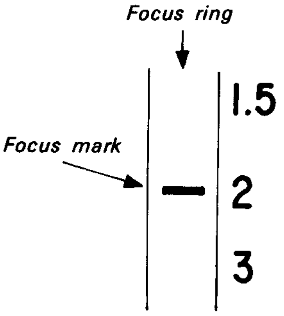

Focus ring
Focus mark
1.5
2
3

Fig. 7-6.

7) Loosen hexagonal socket head setscrew ❶ with an L wrench. (See Fig. 7-9).
8) By turning flange back adjusting Pin ❷ while watching the monitor screen, attain the highest definition of a wedge at the Siemens star center on the screen. (Turn it a few times to the right and left, to assure the definition to be the highest.)

   Note: Do not turn the adjusting pin excessively in either direction at a time.
9) While holding flange back adjusting Pin ❷ down for any further turns, retighten hexagonal socket head setscrew ❶.
10) With zoom lever fixed at its WIDE end, turn focusing ring, and set it at a position that provides the highest definition image of the wedge. Check to assure the focusing mark position thus attained to be within the Fig. 7-7 range.

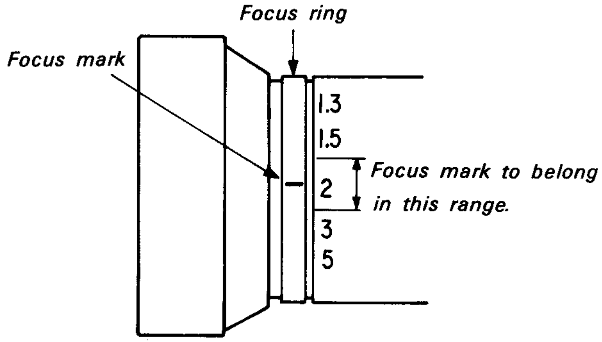

Focus ring
Focus mark
1.3
1.5
2
3
5
Focus mark to belong in this range.

Fig. 7-7.

11) Turn zoom lever fully to its extreme TELE position.
12) By turning focusing ring, check to assure the position that provides the highest definition view of the wedge to be within the Fig. 7-8 range.

    If this specification fails to meet, repeat steps 5) to 12).

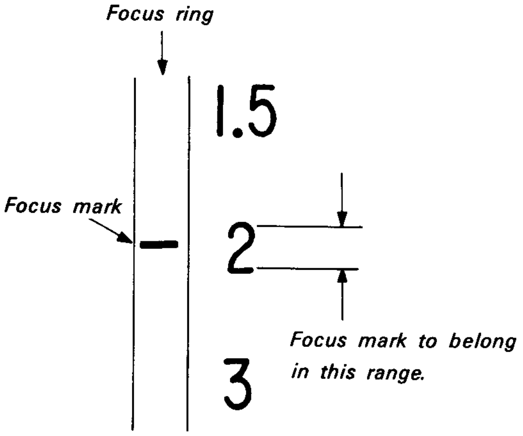

Focus ring
1.5
Focus mark
2
3
Focus mark to belong in this range.

Fig. 7-8.

13) Restore a center click position (AUTO position) of the IRIS control.

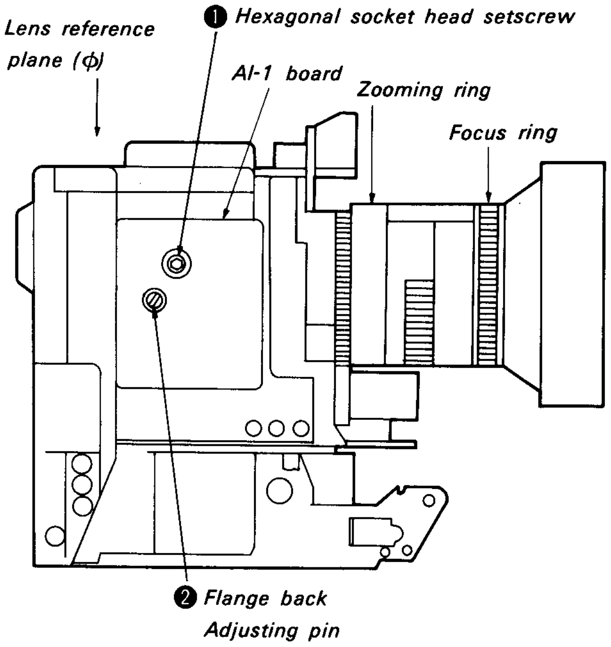

Lens reference plane (ϕ)
❶ Hexagonal socket head setscrew
AI-1 board
Zooming ring
Focus ring
❷ Flange back Adjusting pin

Fig. 7-9.

7-4-2. Camera DC-DC Converter Voltage Check (Camera DC-DC Converter)

Measuring Instrument	Digital voltmeter
CAM 5V check	
Measurement Point	Pin ⑤ of CN005
Specified Value	5.0±0.2Vdc
F5V check	
Measurement Point	Pin ① of CN004
Specified Value	5.05±0.2Vdc
8.5V check	
Measurement Point	Pin ④ of CN005
Specified Value	8.55±0.2Vdc
12V check	
Measurement Point	Pin ② of CN005
Specified Value	12.0±0.2Vdc
20V check	
Measurement Point	Pin ① of CN005
Specified Value	20.0±0.5Vdc
EVF 5V check	
Measurement Point	Pin ① of CN003
Specified Value	5.0±0.2Vdc

Note: Run the above checks with EVF block connected thereon.

Checking method:

1) Each individual power supply voltage should be at its specified level.

7-4-3. Clock Oscillating Frequency Adjustment (CP-18 Board)

Measurement Point	Pin ㊱ (CL) on DT-61 board
Measuring Instrument	Frequency counter
Adjusting Element	CT701
Specified Value	14187500±110 Hz

Adjusting method:

1) Adjust to 14187500±110 Hz with CT701.

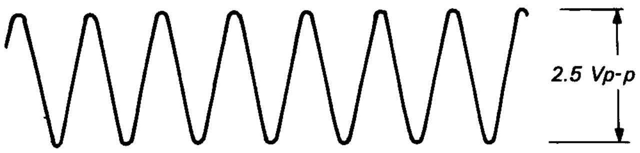


Fig. 7-10.

7-4-4. PLL Adjustment (CP-18 Board)

Measuring Point	Hot side pin of CN724
Measuring Instrument	Digital voltmeter
Adjusting Element	CT702
Specified Value	2.5±0.3Vdc

Adjusting method:

1) Adjust to 2.5±0.3Vdc with CT702.

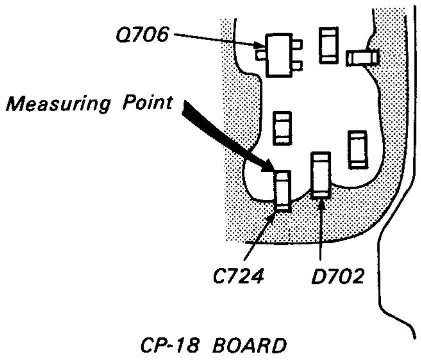


Fig. 7-11.

7-4-5. HALL Setting Adjustment (AI-1 Board)

Object	Colour bar chart standard picture frame
Measurement Point	TP781 (HALL)
Measuring Instrument	Oscilloscope (DC range) or digital voltmeter
Adjusting Element	H GAIN: RV781 H OFFSET: RV782
Specified Value	4.0±0.1Vdc (RV782) 3.0±0.1Vdc (RV781)

Adjusting method:

1) Connect TP784 (Pin ⑭ of IC783) and GND with jumper.
2) Turn RV782 so that it becomes 4.0±0.1Vdc.
3) Remove jumper.
4) Connect TP784 and Pin ③ of W781 (5.0V) with jumper.
5) Turn RV781 so that it becomes 3.0±0.1Vdc.
6) Repeat items 1) to 5) and confirm that both specified values have been satisfied.
7) Remove jumper.

7-4-6. IRIS Setting Adjustment (AT-5, ME-4 Boards)

Object	Colour bar chart standard picture frame
Filters	ND filters: 0.4 and 0.1
Measurement Point	TP701 (CCD OUT) on ME-4 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV885 (IRIS SET) on AT-5 board
Specified Value	200±5 mV

Adjusting method:

1) By turning RV855 on AT-5 board, adjust for a 200±5 mV signal level with no ND filter mounted on. (See Fig. 7-12) (Be sure to conclude this adjustment by turning RV855 in a direction to lower the signal level.)
2) Mount ND filters of 0.5 (0.4+0.1) on in front of lens, and check to assure a smooth variation of the signal level.
3) Remove the ND filters, and check to assure the signal level is 200±5 mV.
4) If the above specification fails to meet, repeat steps 1) to 3).

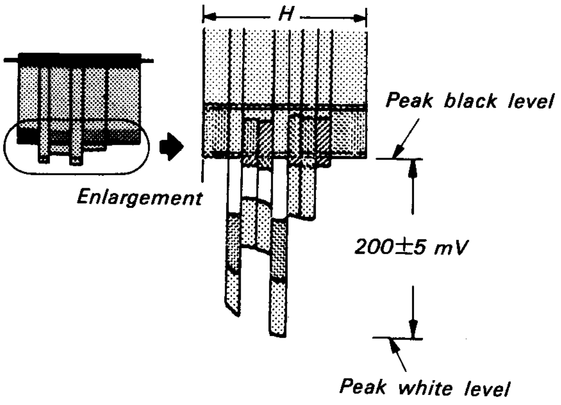

H
Peak black level
Enlargement
200±5 mV
Peak white level

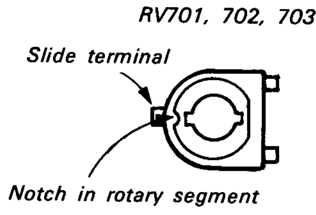
Fig. 7-12.

7-4-7. AGC Setting Adjustment (AT-5, ME-4 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	TP703 (G DET) on ME-4 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV851 (AGC SET) on AT-5 board
Specified Value	250±5 mV

Note: Set the three following RVs on the ME-4 board at their mechanical centers in advance:

1. RV703 (R GAIN)
2. RV702 (B GAIN)
3. RV701 (MAX GAIN)


RV701, 702, 703
Slide terminal
Notch in rotary segment

Mechanical center: The circular notch in an RV rotary segment should coincide with its slide terminal radically.

Fig. 7-13.

Adjusting method:

1) By turning RV851 on AT-5 board, adjust for a 250±5 mV signal level.

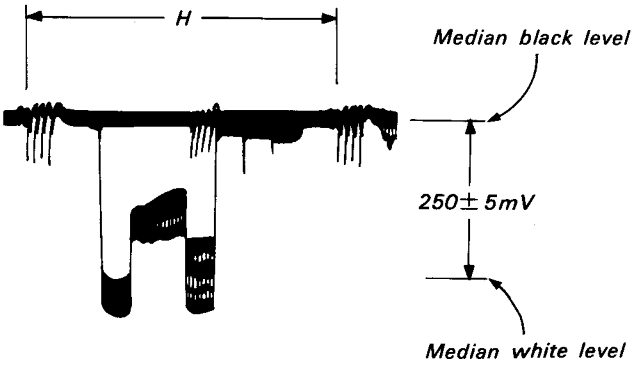

H
Median black level
250± 5mV
Median white level

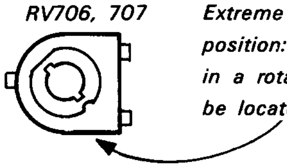
Fig. 7-14.

7-4-8. G-pedestal Adjustment (1) (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	TP706 (G-γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV708 (G-PEDESTAL)
Specified Value	55±5 mV

Note: Turn the two following RVs to the extreme counterclockwise (↺) positions in advance:

1. RV706 (γ)
2. RV707 (WHITE CLIP (1))



Extreme counterclockwise position: The circular notch in a rotary segment should be located here.

Fig. 7-15.

Adjusting method:

1) By turning RV708, adjust for a 55±5 mV pedestal level.

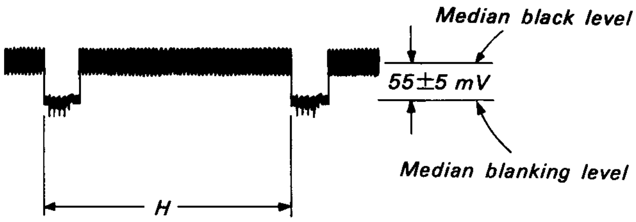


Fig. 7-16.

7-4-9. G-gamma Adjustment (ME-4 Board)

Object	Colour bar chart standard picture frame
Measurement Point	TP706 (G-γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV706 (γ)
Specified Value	440±5 mV

Note: Turn RV707 (WHITE CLIP (1)) to its extreme counterclockwise (↺) position in advance. (See Fig. 7-15)

Adjusting method:

1) By turning RV706, adjust for a 440±5 mV level.

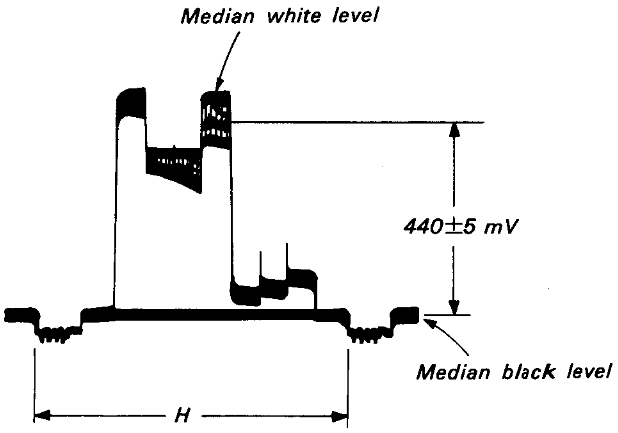


Fig. 7-17.

7-4-10. White Clip Adjustment (1) (ME-4 Board)

Object	High luminance pattern
Measurement Point	TP706 (G-γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV707 (WHITE CLIP (1))
Specified Value	515±15 mV

Adjusting method:

1) By turning RV707, adjust for a 515±15 mV white peak level.

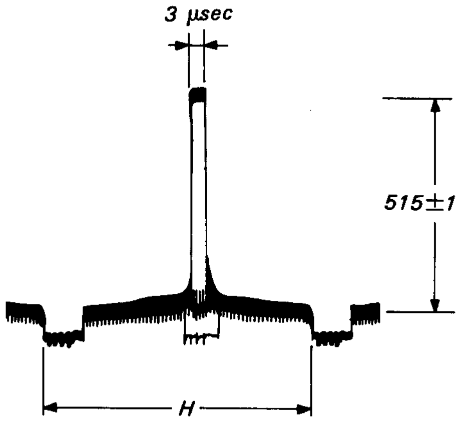


Fig. 7-18.

7-4-11. G-pedestal Adjustment (2) (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	TP706 (G-γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV708 (G-PEDESTAL)
Specified Value	35±5 mV

Adjusting method:

1) By turning RV708, adjust for a 35±5 mVp-p level.

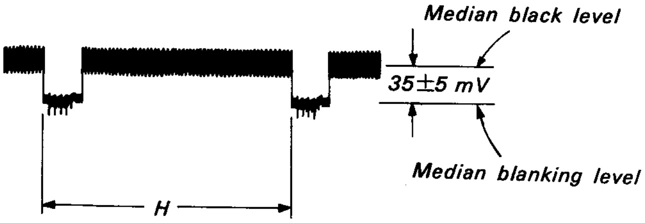

Median black level
35±5 mV
Median blanking level
H

Fig. 7-19.

7-4-12. G-gamma Level Checks (ME-4 Board)

Object	Colour bar chart standard picture frame
Measurement Point	TP706 (G-γ)
Measuring Instrument	Oscilloscope
Adjusting Element	RV707 (WHITE CLIP (1))
Specified Value	400±20 mV

Checking method:

1) Check to assure the white level at 400±20 mV.
2) If the above specification fails to meet, turn RV707 to meet it.

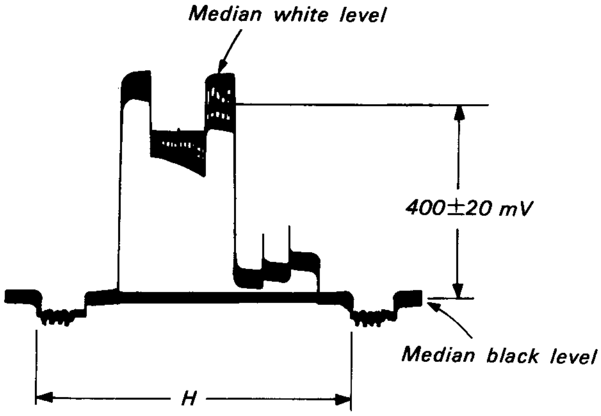

Median white level
400±20 mV
Median black level
H

Fig. 7-20.

7-4-13. RB Offset Adjustment (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	CH1: TP707 (RB-γ) CH2: TP706 (G-γ) EXT TRIGER: TP705 (ID)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
Adjusting Element	RV704 (R.OFF SET), RV705 (B.OFF SET)
Specified Value	The blanking level should be centrally situated within the noise width.

Adjusting method:

1) By turning RV704 and RV705, adjust for a blanking level centrally situated within the noise width. (No level difference at every 1H should be exhibited.)

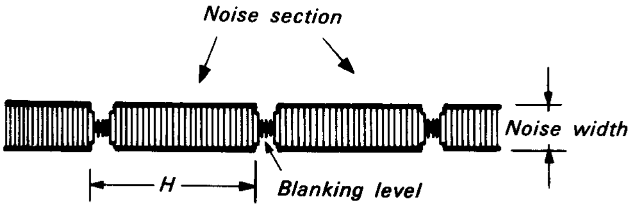

Noise section
Noise width
H
Blanking level

Fig. 7-21.

7-4-14. R-gain/B-gain Adjustments (ME-4 Board)

Object	Totally white pattern
Filter	Colour temperature converting filters: C22 (For R-gain adjustment) W14 (For B-gain adjustment)
Measurement Point	CH1: TP707 (RB-γ) CH2: TP706 (G-γ) EXT TRIGER: TP705 (ID)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
Adjusting Element	R-gain adjustment: RV703 B-gain adjustment: RV702
Specified Value	R-gain adjustment: The level differences of the R-G signal from the blanking level should be +10 mV max. and 0 mV min. B-gain adjustment: The level differences of the B-G signal from the blanking level should be +10 mV max. and 0 mV min.

Note: Turn the two following RVs to the extreme counter-clockwise (↶) positions in advance to maximize the signal level of TP707:
1. RV710 (INDOOR R)
2. RV711 (INDOOR B)

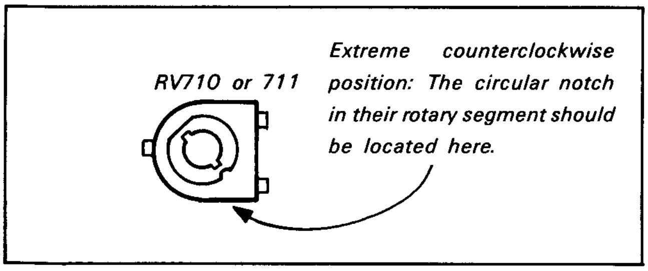

RV710 or 711
Extreme counterclockwise position: The circular notch in their rotary segment should be located here.

Fig. 7-22.

Adjusting method:
1) Mount colour temperature compensating filter C22 on lens.
2) Set the oscilloscope trigger slope at "+".
3) By turning RV703, adjust for a +10 mV max. and 0 mV min. the level difference of the R-G signal against the blanking level.
4) Exchange the colour temperature compensating filter to W14.
5) Set the oscilloscope trigger slope at "−".
6) By turning RV702, adjust for a +10 mV max. and 0 mV min. the level difference of the B-G signal against the blanking level.

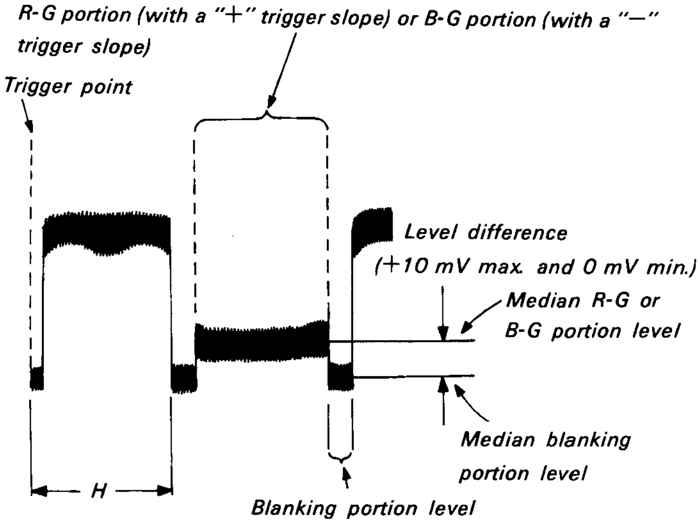

R-G portion (with a "+" trigger slope) or B-G portion (with a "−" trigger slope)
Trigger point
Level difference (+10 mV max. and 0 mV min.)
Median R-G or B-G portion level
Median blanking portion level
Blanking portion level
H

Fig. 7-23.

7-4-15. Indoor White Balance Adjustment (1) (ME-4 Board)

Object	Colour bar chart standard picture frame
Measurement Point	CH1: TP707 (RB-γ) CH2: TP706 (G-γ) EXT TRIGER: TP705 (ID)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
Adjusting Element	RV710 (INDOOR R) RV711 (INDOOR B)
Specified Value	The level difference between the white and black levels should be less than 5 mV.

Adjusting method:
1) By turning RV710, equalize the R-G signal white level with the black level.
2) By turning RV711, equalize the B-G signal white level with the black level.

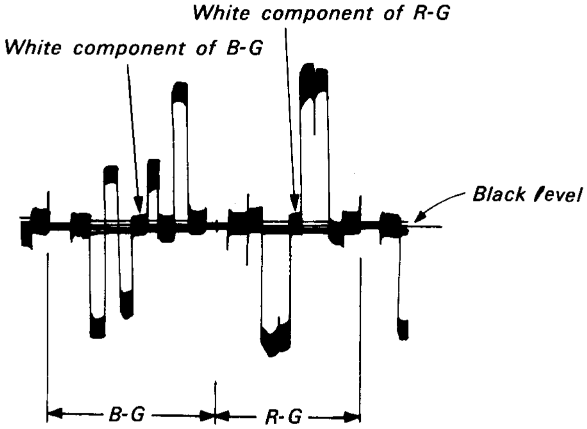

White component of R-G
White component of B-G
Black level
B-G
R-G

Fig. 7-24.

7-4-16. MPX Adjustment (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV717 (MPX)
Specified Value	Only one black luminance spot of a minimized size should be exhibited.

Note: 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) By turning RV717, bring black luminance spots into one.

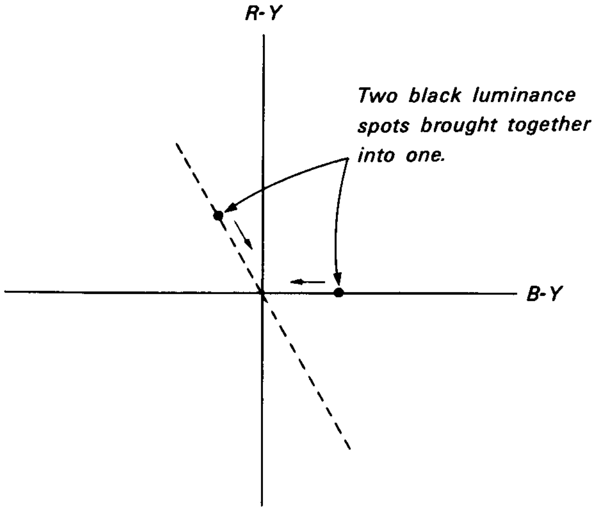
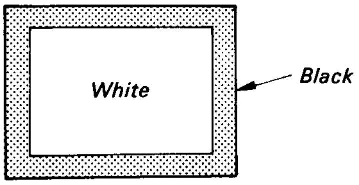


Fig. 7-25.

7-4-17. Matrix Gain Adjustments (ME-4 Board)

Object	White pattern (Should insert a black frame. See Fig. 7-26)
Measuring Instrument	Oscilloscope Vertical mode: ADD CH2 polarity: INVERT
G1 gain adjustment	
Measurement Point	CH1: TP708 (G0) on ME-4 board CH2: TP709 (G1) on ME-4 board
Adjusting Element	RV713 (G1)
Specified Value	No level difference should be exhibited by the white and black signals.
G2 gain adjustment	
Measurement Point	CH1: TP708 (G0) on ME-4 board CH2: TP710 (G2) on ME-4 board
Adjusting Element	RV715 (G2)
Specified Value	No level difference should be exhibited by the white and black signals.
RB1 gain adjustment	
Measurement Point	CH1: TP711 (RB0) on ME-4 board CH2: TP712 (RB1) on ME-4 board
Adjusting Element	RV714 (RB1)
Specified Value	No level difference should be exhibited by the white and black signals.
RB2 gain adjustment	
Measurement Point	CH1: TP711 (RB0) on ME-4 board CH2: TP713 (RB2) on ME-4 board
Adjusting Element	RV716 (RB2)
Specified Value	No level difference should be exhibited by the white and black signals.



Take a photograph of a pattern box of the standard picture frame.

Fig. 7-26.

Adjusting method:

1) By turning the respective RVs, eliminate all level differences between the white and black signals.

Note: The adjustment is unnecessary when there is no signal level difference between the white and black signals.

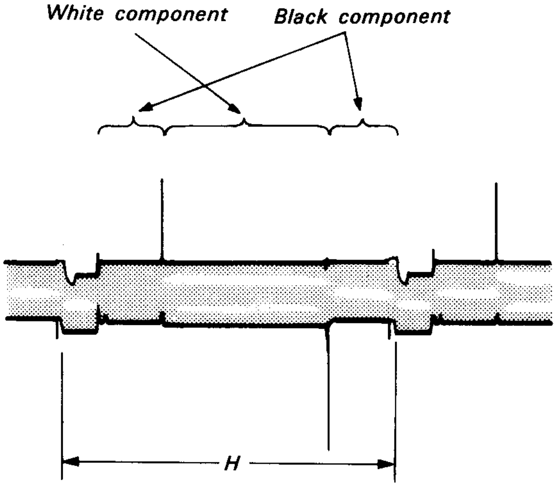


Fig. 7-27.

7-4-18. Wiper White Adjustment (ME-4, VI-22 Boards)

Object	Arbitrary
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV728 (CB 0°), RV729 (CB 90°) on the ME-4 board
Specified Value	The 4.43 MHz component of white (wiper) signals should be minimized.

Adjusting method:

1) Supply Pin ① of W603 (A, FADER) on FC-10 board with the 5.0Vdc DC voltage from a regulated DC power supply.
2) By turning RV728 and RV729 on the ME-4 board, minimize the amplitude of the white (wiper) signals.

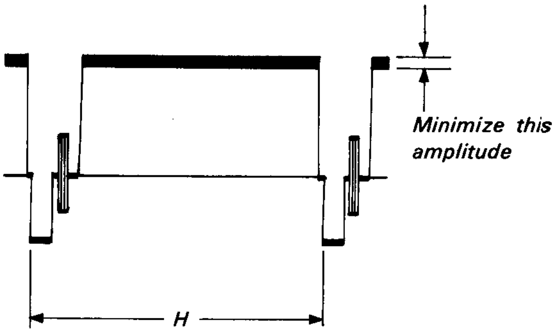


Fig. 7-28.

7-4-19. Carrier Blance Adjustment (ME-4 Board)

Object	Totally black (with lens blocked with a black cap)
Measuring Instrument	Oscilloscope
R-Y offset adjustment	
Measurement Point	TP714 (R-Y)
Adjusting Element	RV718 (R-Y OFFSET)
Specified Value	The median black signal level should be equal to the median blanking level.
B-Y offset adjustment	
Measurement Point	TP715 (B-Y)
Adjusting Element	RV719 (B-Y OFFSET)
Specified Value	The median black signal level should be equal to the median blanking level.

Note: 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) By turning the respective RVs, eliminate all level differences between the median black level and the median blanking level.

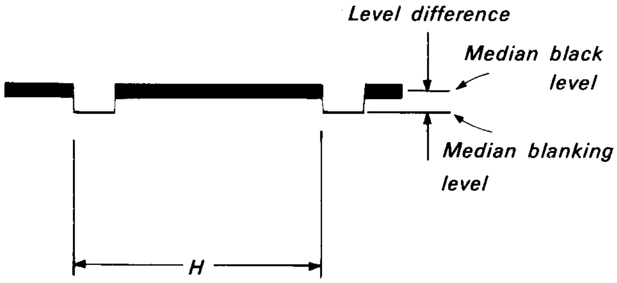


Fig. 7-29.

7-4-20. SET-UP Adjustment (CP-18, VI-22 Boards)

Object	Totally black (with lens blocked with a black cap)
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV701 (SET-UP) on CP-18 board
Specified Value	15±5 mV

Adjusting method:

1) By turning RV701 on CP-18 board, adjust for a 15±5 mV SET-UP level.

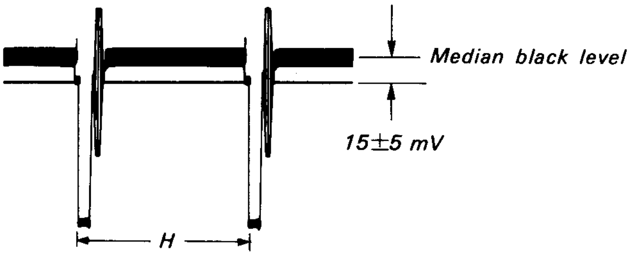


Fig. 7-30.

7-4-21. Y-level Adjustment (CP-18, VI-22 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV702 (FDG) on CP-18 board
Specified Value	350±5 mV

Adjusting method:

1) By turning RV702 on CP-18 board, adjust for a 350±5 mV Y level.

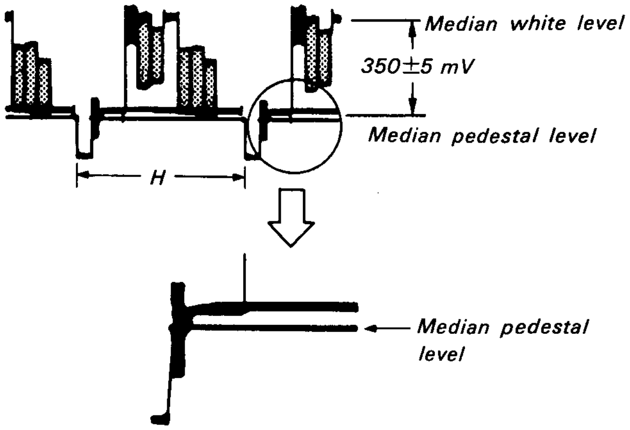


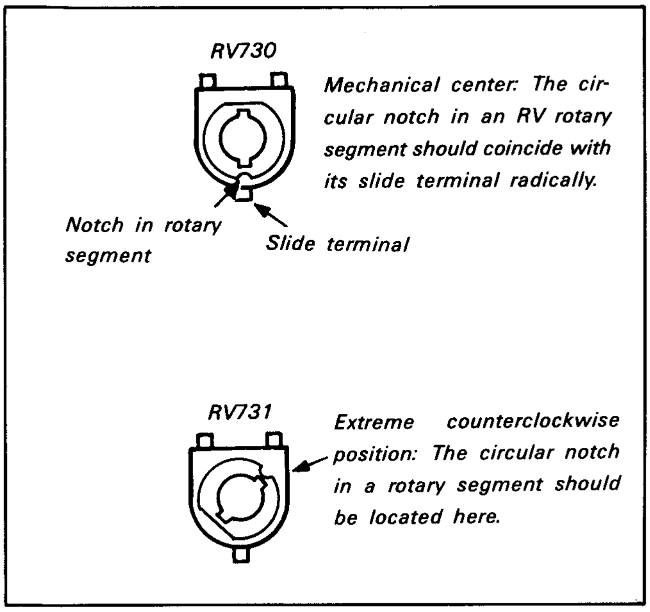
Fig. 7-31.

7-4-22. Aperture Adjustment (ME-4, VI-22 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV730 (APS) and RV731 (APL) on ME-4 board
Specified Value	RV730: Aperture level at 120±10 mV RV731: Aperture level at 60±10 mV

Note: Preset the following VRs as stipulated, in advance:

1. ME-4 board: RV730 (APS)... Mechanical center
2. ME-4 board: RV731 (APL)... Extreme counterclockwise (↺)
3. CP-18 board: RV703 (WHITE CLIP (2))... Extreme clockwise (↻)


RV730
Notch in rotary segment
Slide terminal
RV731

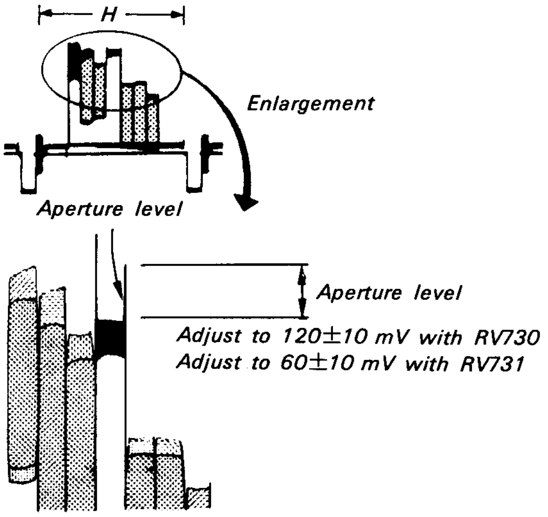
Mechanical center: The circular notch in an RV rotary segment should coincide with its slide terminal radically.

Extreme counterclockwise position: The circular notch in a rotary segment should be located here.

Fig. 7-32.

Adjusting method:

1) After focusing is completed, slightly swing camera block to the right and left, and fix it where the aperture level in between white and magenta (See Fig. 7-33) is maximized.
2) By turning RV730 on ME-4 board, adjust for a 120±10 mV aperture level.
3) By turning RV731 on ME-4 board, adjust for a 60±10 mV aperture level.


H
Enlargement
Aperture level
Aperture level

Adjust to 120±10 mV with RV730
Adjust to 60±10 mV with RV731

Fig. 7-33.

7-4-23. White Clip Adjustment (2) (CP-18, VI-22 Boards)

Object	High luminance pattern
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV703 on CP-18 board (WHITE CLIP (2))
Specified Value	420±10 mV

Adjusting method:

1) By turning RV703 on CP-18 board, adjust for a 420±10 mV signal level.

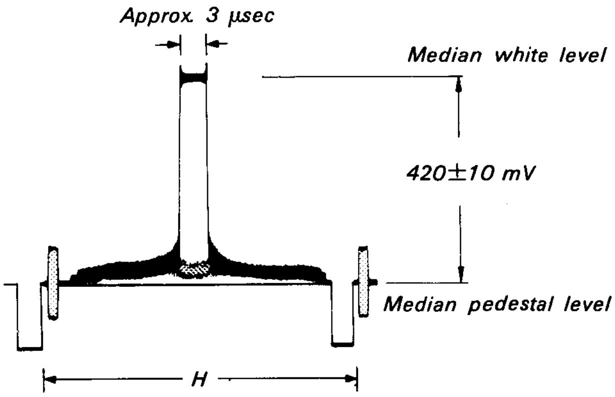

Approx. 3 μsec
Median white level
420±10 mV
Median pedestal level
H

Fig. 7-34.

7-4-24. Output Level Checks (VI-22, CP-18 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	Y level: RV702 (FDG) on CP-18 board SET-UP: RV701 on CP-18 board (SET-UP)
Specified Value	Y level: 350±5 mV SET UP: 15±5 mV SYNC level: 140±15 mV

Checking method:

1) Check the output level at Pin ② of CN201 on VI-22 board, and if the specifications fail to meet, make adjustments by turning RV701 and RV702.

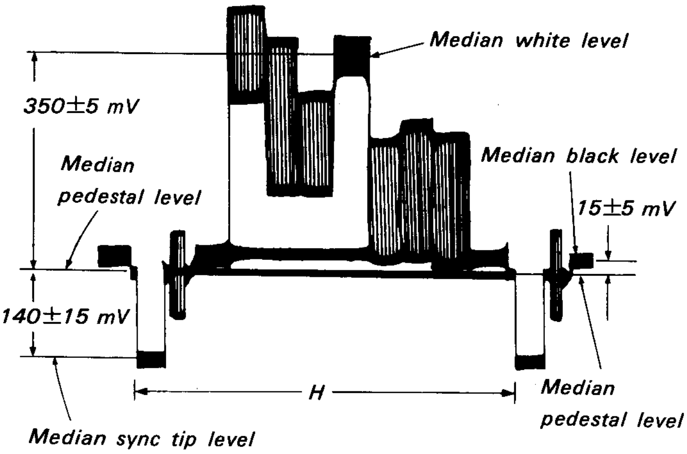


Fig. 7-35.

7-4-25. Max. Gain Adjustment (ME-4, VI-22 Boards)

Object	Colour bar chart standard picture frame
Filter	ND filter: 0.9 . . . 2 pcs. ND filter: 0.4 . . . 1 pc.
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV701 on ME-4 board ɔard (MAX GAIN)
Specified Value	175±5 mV

Adjustment method:

1) Set the SENS switch (S673 on CG-1 board) at its HIGH position.
2) Mount ND filters of 2.2 (0.9+0.9+0.4) on lens.
3) By turning RV701 on ME-4 board, adjust for a 175±5 mV level.
4) Set the SENS switch at its NORMAL position.

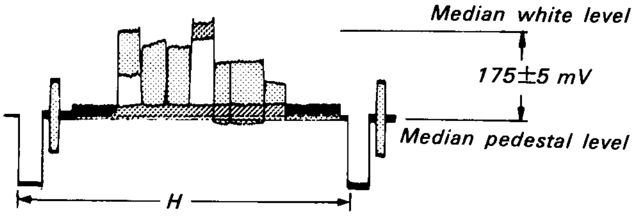


Fig. 7-36.

7-4-26. AGC Setting Check (AT-5, ME-4 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	TP703 (G DET) on ME-4 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV851 (AGC SET) on AT-5 board
Specified Value	250±20 mVp-p

Checking method:

1) Check to assure that the signal level is 250±20 mVp-p.
2) When the specification fails to meet, make adjustments for a 250±20mVp-p level by turning RV851 on the AT-5 board.

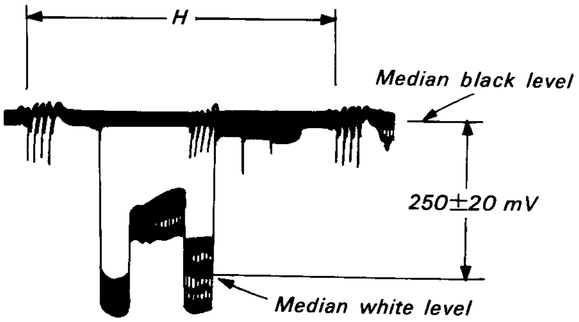


Fig. 7-37.

7-4-27. LLA Adjustment (AT-5 Board)

Object	Colour bar chart standard picture frame
Filter	ND filter: 0.1 ... 2 pcs. ND filter: 1.0 ... 1 pc. ND filter: 0.4 ... 1 pc.
Measurement Point	EVF displays should be observed.
Measuring Instrument	
Adjustment Element	RV852 (LLA)
Specified Value	A "LOW LIGHT" display should be made with ND filter of 1.6. No "LOW LIGHT" display with that of 1.5.

Adjusting method:

1) Engage either a STANDBY or REC mode.
2) Mount ND filter of 1.6 (1.0+0.4+0.1+0.1) on in front of lens.
3) By turning RV852, adjust for no "LOW LIGHT" display in EVF.
4) Slowly turn RV852, and stop turning it where a "LOW LIGHT" display is made.
5) Remove just one ND filter of 0.1.
6) Check to assure that the "LOW LIGHT" display has disappeared.
7) If the display fails to disappear, repeat steps 2) to 6) until it does.

7-4-28. Burst Phase and Burst Level Adjustment (ME-4, VI-22 Boards)

Object	Colour bar chart standard picture frame
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope Trigger slope: +
Adjusting Element	RV726 (HUE) and RV727 (BURST GAIN) on ME-4 baord
Specified Value	(Burst phase) Should become a single line. (Burst level) 150±5 mVp-p

Note: When performing colour reproductivity adjustment with a vectorscope, this adjustment becomes unnecessary.

Adjusting method:

1) Make burst waveform into a single line with RV726. There are 2 points in the rotating range of RV726 in which the waveform becomes a single line. Select the one in which the colour is reproduced correctly on the monitor screen.
2) Turn RV727 so that the burst amplitude becomes 150 ±5 mVp-p.

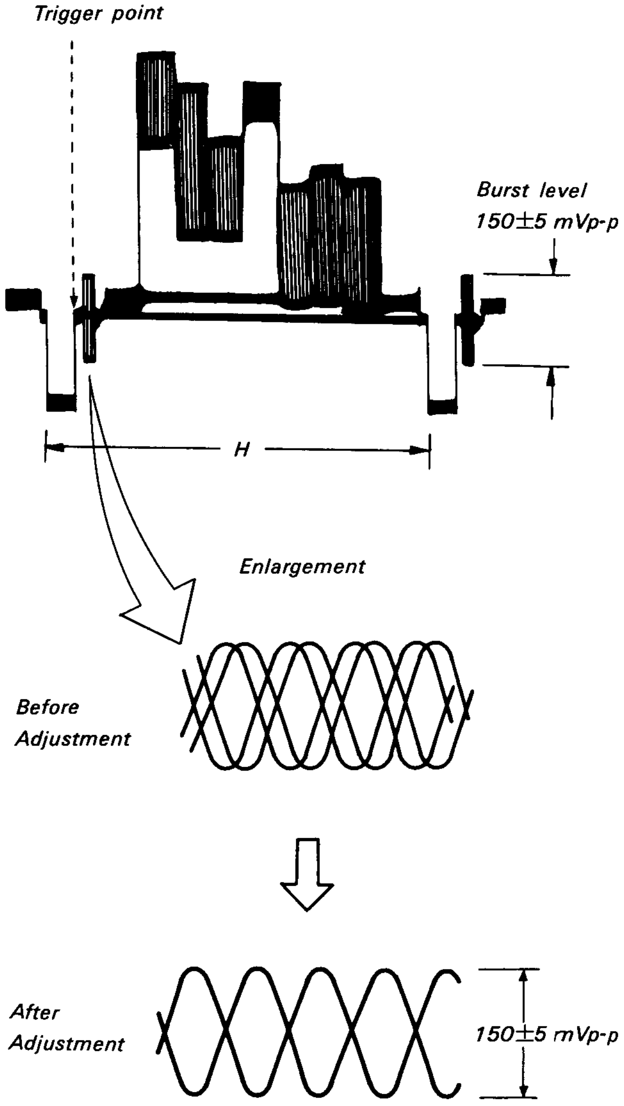


Fig. 7-38.

7-4-29. Indoor White Balance Adjustment (2) (ME-4 Board)

Object	Colour bar standard picture frame
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV710 (INDOOR R) RV711 (INDOOR B)
Specified Value	The white and black luminance spots should coincide with each other in location.

Note: 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) By turning RV710 and RV711, have the white luminance spot coincide with the black luminance spot in location.

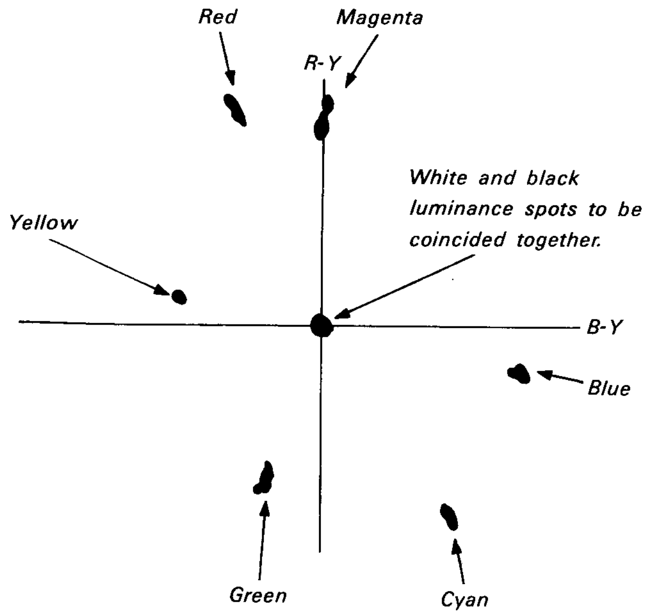


Fig. 7-39.

7-4-30. Colour Reproductibility Adjustments (Vectorscope Employing Process) (ME-4 Board)

Object	Colour bar chart standard picture frame
Measurement Point	VIDEO OUT terminal of AC adaptor or T/T unit
Measuring Instrument	Vectorscope
Adjusting Element	RV721 (B-Y GAIN) RV723 (B-Y MIX) RV720 (R-Y GAIN) RV722 (R-Y MIX) RV726 (HUE) RV727 (BURST GAIN)
Specified Value	Each individual luminance colour spot should be located within its colour reproduction frame. (Fig. 7-40)

Note: First check to assure that the burst luminance spot is located at its specified position and the white luminance spot has coincided with the origin point, before making adjustments. (When the white luminance spot and origin point fail to coincide with each other in location, perform white balance adjustment (RV710 and RV711) and carrier balance adjustment (RV718 and RV719) over again.)

Adjusting method:

1) Turn RV726 and RV727 and match the burst luminance spot at the specified location (135°, 75%) on the vectorscope.
2) By turning RV720 and RV722, locate the "red" luminance spot within its colour reproduction frame.
3) By turning RV721 and RV723, locate the "yellow" luminance spot within its colour reproduction frame.
4) By repeating steps 1) and 2), locate all the respective colour luminance spots within their colour reproduction frames.

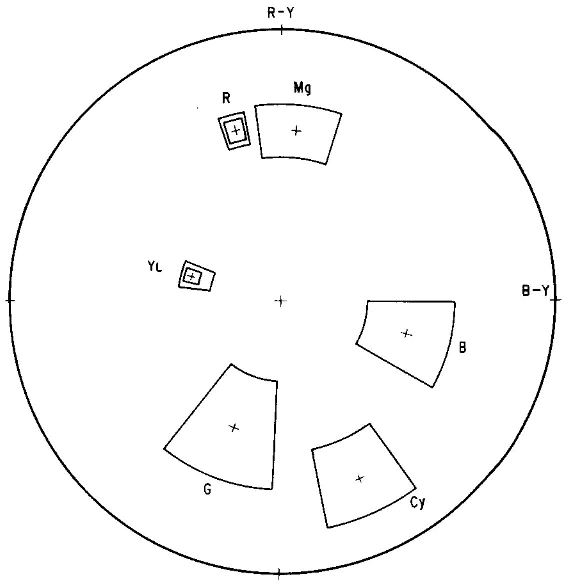
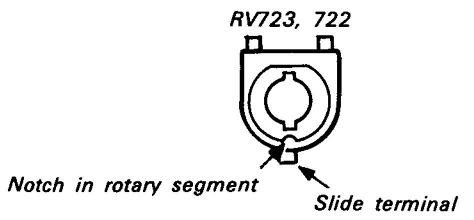


Fig. 7-40.

7-4-31. Colour Reproductibility Adjustments (Oscilloscope Employing Process)

A. Gain adjustment (ME-4, VI-22 boards)

Object	Colour bar chart standard picture frame
Measurement Point	Pin ② of CN201 on VI-22 board (CAM OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV721 (B-Y GAIN) on ME-4 board RV720 (R-Y GAIN) on ME-4 board
Specified Value	"Magenta" level: 235±5 mVp-p "Yellow" level: 127±5 mVp-p



Mechanical center: The circular notch in an RV rotary segment should coincide with its slide terminal position radically.

Fig. 7-41.

Adjusting method:

1) Set RV723 (B-Y MIX) and RV722 (R-Y MIX) on ME-4 board at its mechanical center. (See Fig. 7-41)
2) By turning RV720 on ME-4 board, adjust for a "Magenta" amplitude at 235±5 mVp-p. (Fig. 7-42 ①)
3) By turning RV721 on ME-4 board, adjust for a "Yellow" amplitude at 127±5 mVp-p. (Fig. 7-42 ②)

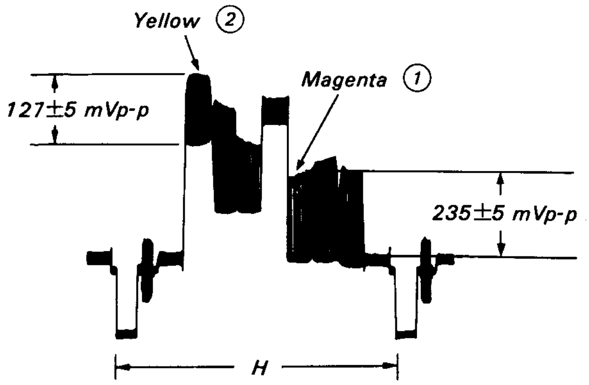


Fig. 7-42.

B. Hue adjustment (ME-4 board)

Object	Colour bar standard picture frame
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode) * With an oscilloscope oriented colour reproduction frame stuck on in advance.
Adjusting Element	RV723 (B-Y MIX), RV722 (R-Y MIX)
Specified Value	Respective colour luminance spots should be located within their colour reproduction frame. (See Fig. 7-43)

Note: 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) Have the "black" luminance spot on the oscilloscope coincide with the origin point of the colour reproduction frame in location.
2) Check to assure that the "white" and "black" luminance spots are coincided with each other in location. (If they have not, make white balance adjustments (RV710 and RV711) over again.)
3) By turning RV723 and RV722 alternately, locate the "red" and "yellow" luminance spots within their colour reproduction frames. (Also check to assure that the other colour luminance spots have been located within their colour reproduction frame.)
4) Check the colours reproduced on the monitor screen.

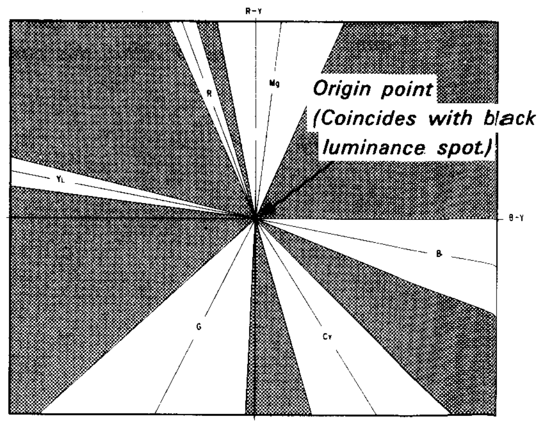


Fig. 7-43.

7-4-32. Outdoor White Balance Adjustment (Vectorscope Employing Process) (ME-4 Board)

Object	Colour bar chart standard picture frame
Filter	Daylight filter (C14)
Measurement Point	VIDEO OUT terminal of either AC adaptor or T/T unit
Measuring Instrument	Vectorscope
Adjusting Element	RV709 (OUTDOOR R) RV712 (OUTDOOR B)
Specified Value	See Fig. 7-44

Adjusting method:

1) With a daylight filter dismounted, check to assure that the white luminance spot on the vectorscope is located at the origin point when the WHITE BALANCE switch (S672 on CG-1 board) is set at its INDOOR (☼) position. (If the spot is not at the origin point, make white balance adjustments (RV710 and RV711) and carrier balance adjustments (RV728 and RV729) over again.)
2) Mount a daylight filter on the lens, and set the WHITE BALANCE switch at its OUTDOOR (☼) position.
3) By turning RV709 and RV712, adjust the white luminance spot to the lower left of the origin point and at 1 mm on the Q axis.
4) Restore an INDOOR (☼) position setting of the WHITE BALANCE switch.

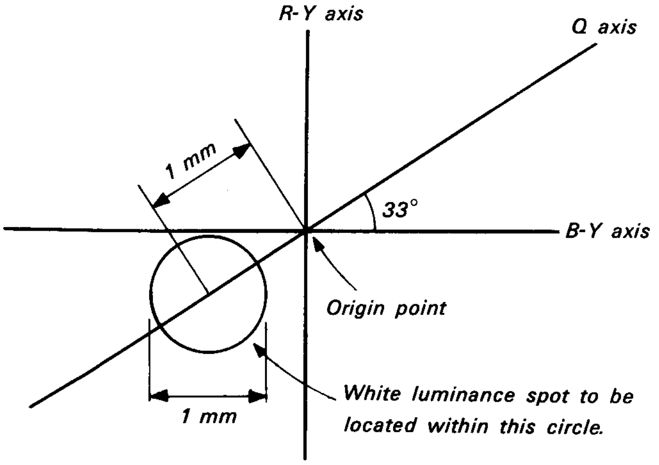


Fig. 7-44.

7-4-33. Outdoor White Balance Adjustment (Oscilloscope Employing Process) (ME-4 Board)

Object	Colour bar chart standard picture frame
Filter	Daylight filter (C14)
Measurement Point	CH1 (X): TP715 (B-Y) CH2 (Y): TP714 (R-Y)
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV709 (OUTDOOR R) RV712 (OUTDOOR B)
Specified Value	See Fig. 7-45

Note: 1) When adjustments are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

2) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) Set the WHITE BALANCE switch (S672 on CG-1 board) at its OUTDOOR (☼) position.
2) By turning RV709, adjust for a 3 mV potential difference in the R-Y axis direction between centers of the white and black luminance spots (with the white luminance spot situated beneath the black luminance spot).
3) By turning RV712, adjust for a 4 mV potential difference in the B-Y axis direction between centers of the white and black luminance spots (with the white luminance spot situated to the left of the black luminance spot).
4) Restore an INDOOR (☼) position of the WHITE BALANCE switch.

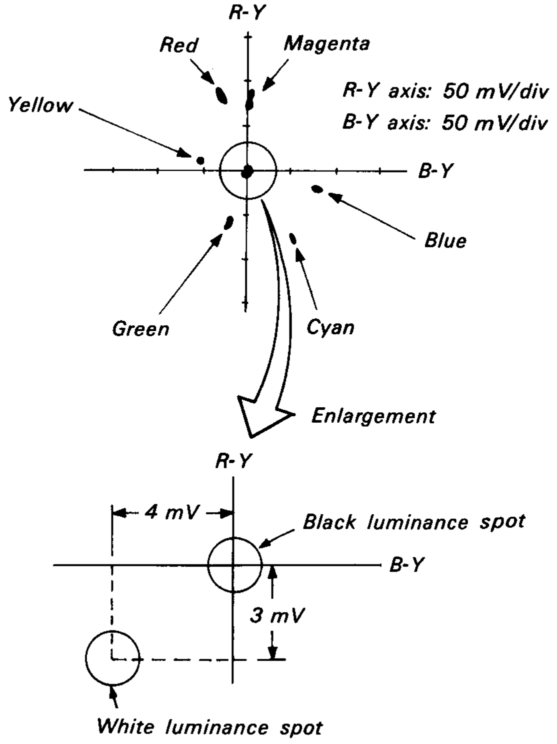


Fig. 7-45.

7-4-34. Auto-tracking White Balance Adjustments (AT-5, AW-3, ME-4 Boards)

Object	Totally white pattern *Note: 1)
Measurement Point	CH1 (X): TP715 (B-Y) on ME-4 board CH2 (Y): TP714 (R-Y) on ME-4 board
Measuring Instrument	Oscilloscope (X-Y mode)
Adjusting Element	RV853 (WR OFFSET) on AT-5 board RV854 (WB OFFSET) on AT-5 board RV701 (SR GAIN) on AW-3 board RV702 (SB GAIN) on AW-3 board

Note: 1) If any other light than that from pattern box enters the WHITE BALANCE sensor (SB701 on AS-13 board), no valid adjustments are possible. Accordingly, adjustments should preferably be made in a dark room or equivalent, but where such an arrangement is not possible, follow the instructions below before making adjustments.

1. Place camera block on a piece of black paper or equivalent. (This precaution is required even when making adjustments in a dark room.)
2. Bring camera block and pattern box closer together than 0.5m apart. (No focusing is required, however.)
3. Cover the WHITE BALANCE sensor with black paper or equivalent to block any other light than that of pattern box from entering the sensor.

2) When potential difference readings are made difficult by an overly low signal level, use a 1 : 1 probe in lieu of the 10 : 1 probe.

3) For the elimination of high frequency noises, insert a resistor (approximately 10 kΩ when employing a 10 : 1 probe or approximately 1 kΩ when employing a 1 : 1 probe) in series in between the probe and the test point.

Adjusting method:

1) Set the WHITE BALANCE switch (S672 on CG-1 board) at its AUTO position.
2) Connect TP701 ($\overline{\text{ONE PUSH}}$) on AW-3 board to ground with a jumper wire.
3) Connect TP702 (WRITE) on AW-3 board to Pin ⑦ of CN703 (5V) on AW-3 board with a jumper wire.
4) By turning RV853 and RV854 on AT-5 board, have the white and black luminance spots coincide with each other.
5) Disconnect the TP701 connecting jumper wire.
6) Disconnect the TP702 connecting jumper wire.
7) By turning RV701 and RV702 on AW-3 board, have the white and black luminance spots coincide with each other.
8) Set the WHITE BALANCE switch at its INDOOR (☼) position.

White and black luminance spots to be superimposed together.

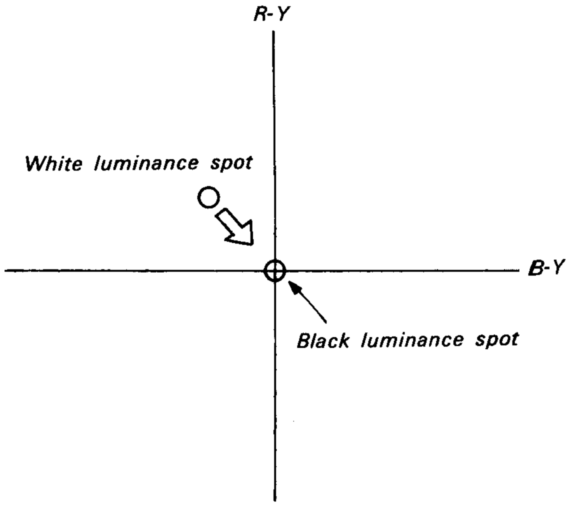


Fig. 7-46.

7-4-35. Auto-tracking White Balance Operational Checks

Object	Totally white pattern *Note
Filter	Colour temperature compensating filters: C22 and W14
Measurement Point	Run checks on the monitor TV screen.
Measuring Instrument	

Note: Refer to note 1) in the last paragraph.

Checking method:

1) Set the WHITE BALANCE switch (S672 on CG-1 board) at its AUTO position.
2) Cover camera block with black paper or equivalent, to prevent the incidence of any other light than that of pattern box to the WHITE BALANCE sensor (SB701 on AS-13 board).
3) Check to assure that there is no colouring on the monitor screen.
4) Mount colour temperature compensating filter C22 on the WHITE BALANCE sensor (exercising care against the entry into the sensor of any other light than that through the filter, with black paper or equivalent).
5) Check the monitor screen to assure it has turned orange in colour.
6) Exchange the colour temperature compensating filter to W14.
7) Check the monitor screen to assure that it has turned cyan in colour.
8) Restore an INDOOR (☼) position of the WHITE BALANCE switch.

7-5. CHARACTER GENERATOR SYSTEM ADJUSTMENT

7-5-1. Character Generator Clock Frequency Adjustment (CG-1, FC-10 Boards)

Mode	Standby
Object	Arbitrary
Measurement Point	Pin ③ of CN672 on CG-1 board
Measuring Instrument	Oscilloscope
Adjusting Element	CT671 on CG-1 board
Specified Value	36.0±0.5 μsec

Connection:

1) Make jumper wire connections at the two following locations on the FC-10 board.
   1. Pin ⑱ of IC601 ($\overline{\text{CAM DOWN}}$) — GND
   2. TP603 (Pin ⑲ of IC601: $\overline{\text{TEST}}$) — GND

Adjusting method:

1) Switch CAMERA POWER (S674 on CG-1 board) on, and engage a standby mode.
2) Check to assure the display either on a monitor TV or the EVF screen of the characters such as shown in Fig. 7-47.
3) By operating CT671, adjust for a 36.0±0.5 μsec cycle time. (See Fig. 7-48)

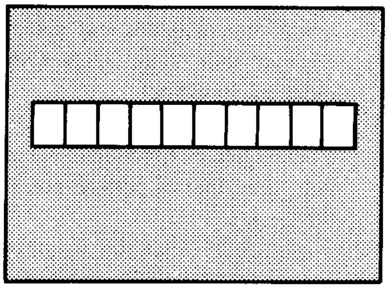


Fig. 7-47.

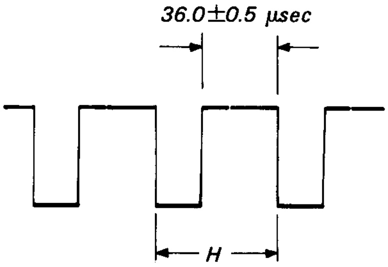


Fig. 7-48.

7-5-2. Clock Frequency Adjustment (FC-10 Board)

Mode	Standby
Object	Arbitrary
Measurement Point	Pin ㊲ of IC601
Measuring Instrument	Frequency counter
Adjusting Element	CT601
Specified Value	8192.00±0.05 Hz

Connection:

1) Make jumper wire connections at the two following locations.
   1. Pin ⑱ of TC601 ($\overline{\text{CAM DOWN}}$) — GND
   2. TP603 (Pin ⑲ of TC601: $\overline{\text{TEST}}$) — GND

Adjusting method:

1) Switch CAMERA POWER (S674 on CG-1 board) on, and engage a standby mode.
2) Check to assure the display either on a monitor TV or the EVF screen of the characters such as shown in Fig. 7-47.
3) Supply Pin ① of W606 (LB3V) on FC-10 board with the 3.00Vdc voltage from a regulated-DC power supply.
4) Switch CAMERA POWER (S674 on CG-1 board) off.
5) By operating CT601, adjust for a 8192.00±0.05 Hz frequency.

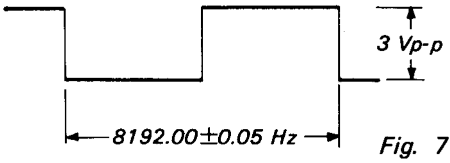


Fig. 7-49.

7-5-3. Wiper Adjustment (FC-10 Board)

Mode	Standby
Object	Arbitrary
V_T Adjustment	
Measurement Point	Pin ⑭ of IC605
Measuring Instrument	Oscilloscope
Adjusting Element	RV601
Specified Value	3±0.05 Vp-p
Wiper Window Height Adjustment	
Measurement Point	Pin ⑭ of IC604
Measuring Instrument	Oscilloscope (sweep, V-range)
Adjusting Element	Voltage VR of stabilized power supply
Specified Value	2±0.1m sec
Wiper Window Width Adjustment	
Measurement Point	Pin ⑭ of IC604
Measuring Instrument	Oscilloscope (sweep, H-range)
Adjusting Element	RV602
Specified Value	5.0±0.5 μsec

Connection:

1) Connect stabilized power supply to Pin ① of W603 on FC-10 board. (A. FADER)

Adjusting method:

1) Adjust Pin ⑭ of IC605 waveform height to 3±0.05 Vp-p with RV601 (See Fig. 7-50 (a)).
2) Set width of the pulse generated at Pin ⑭ of IC604 to 2±0.1msec by adjusting DC stabilized power supply voltage (See Fig. 7-50 (b)).
3) Set width of the pulse generated at Pin ⑭ of IC604 to 5±0.5 μsec by adjusting RV602 (See Fig. 7-50 (c)).

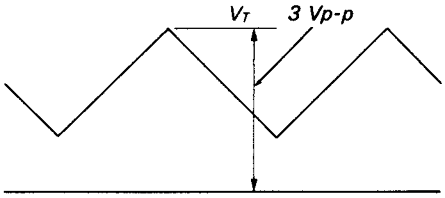


Fig. 7-50 (a)

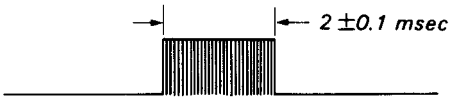


Fig. 7-50 (b)

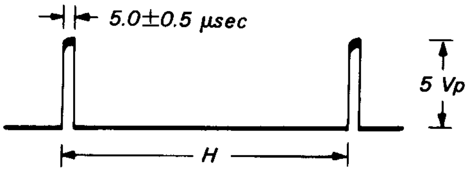
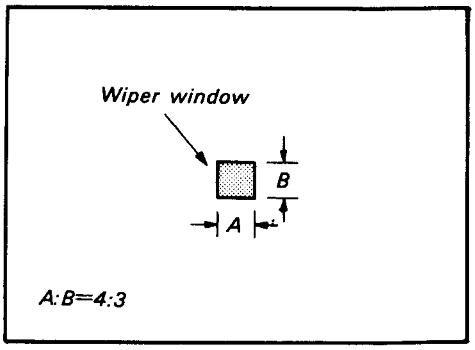


Fig. 7-50 (c)

Confirmation:

1) Horizontal/vertical ratio of monitor TV screen wiper window should be approx. 4 : 3 (See Fig. 7-51).



Monitor TV screen

Fig. 7-51.

7-6. ELECTRONIC VIEW FINDER (EVF) SYSTEM ADJUSTMENT

7-6-1. Horizontal Tilt Adjustment

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3CSP), monoscope portion
Specified Value	See Fig. 7-53

Adjusting method:
1) By turning RV705 (BRIGHT), adjust for a luminance level that provides appropriate visibility of the CRT screen.
2) Loosen the DY (deflection yoke) tightening band.
3) By turning DY, achieve a horizontal position of the image.
4) Position the DY rear end 52.5±0.3 mm away from the CRT face plate.
5) Retighten the DY tightening band (exercising care against any excessive tightening).

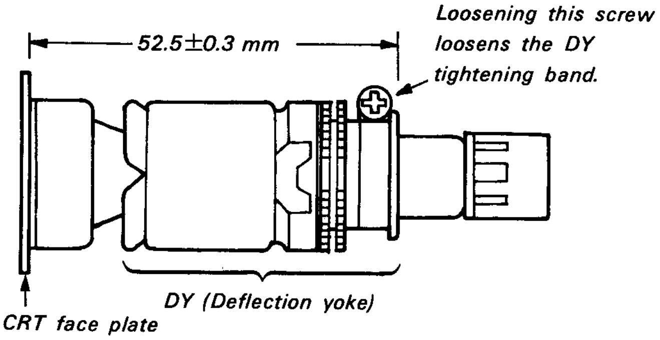
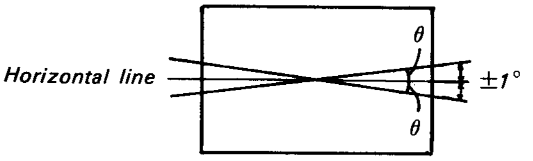

52.5±0.3 mm
Loosening this screw loosens the DY tightening band.
DY (Deflection yoke)
CRT face plate

Fig. 7-52.


Horizontal line
θ
θ
±1°

Specified value: Image orientation to be within ±1° of horizontal line

Fig. 7-53.

7-6-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3CSP), monoscope portion
Specified Value	See Fig. 7-55

Adjusting method:
1) By operating centering magnets, provide the image with even peripheral margins, both horizontally and vertically.

Note: Since the centering position is affected by the earth magnetism, turn the equipment over 360° horizontally, and make adjustments at the orientation that exhibits median displacements of the image.

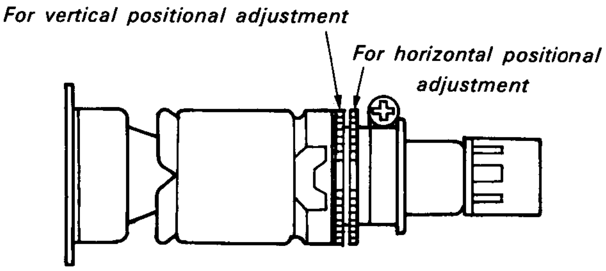

For vertical positional adjustment
For horizontal positional adjustment

Fig. 7-54.

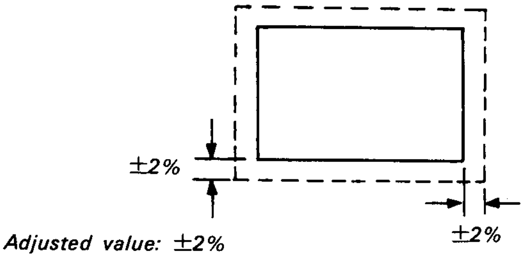

±2%
±2%
Adjusted value: ±2%

Fig. 7-55.

7-6-3. Horizontal Oscillating Frequency Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3CSP)
Measurement Point	Positive terminal of C708
Measuring Instrument	Digital voltmeter or oscilloscope (DC range)
Adjusting Element	RV702
Specified Value	2.30±0.1Vdc

Adjusting method:
1) By turning RV702, adjust for a 2.30±0.1Vdc terminal voltage.

7-6-4. Horizontal Amplitude Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3CSP), monoscope portion
Adjusting Element	C718, C719
Specified Value	6±3%

Adjusting method:

1) By turning RV704, focus the image.
2) By turning RV701, align upper and lower edges of the monoscope image with those of the screen.
3) By turning RV705, attain a normal brightness level.
4) To achieve 6±3% horizontal overscans (half side), short-circuit or open the patterns (A and B) for H size adjusting capacitors (C718 and C719), one at a time until the overscan level is achieved. (See Fig. 7-57)

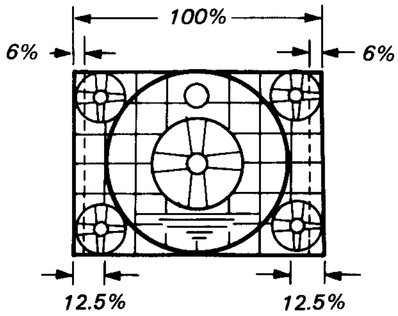
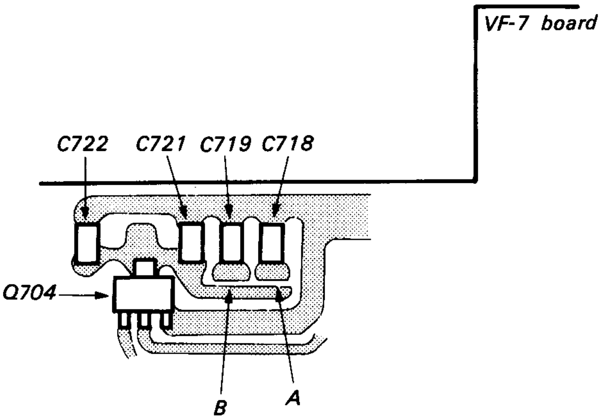


Fig. 7-56.



A	B	H size
Open	Open	Small
Short-circuit	Open	↓
Open	Short-circuit	
Short-circuit	Short-circuit	Large

Fig. 7-57.

7-6-5. Vertical Amplitude Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3CSP), monoscope portion
Adjusting Element	RV701
Specified Value	6±3%

Adjusting method:

1) By turning RV701, adjust for 6±3% vertical overscans (half side).

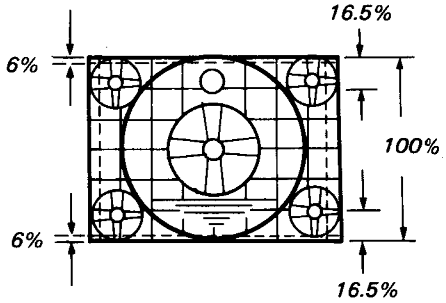


Fig. 7-58.

7-6-6. Brightnes, Contrast Adjustments (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3CSP), monoscope portion
Adjusting Element	Brightness: RV705 Contrast: RV703

Adjusting method:

1) By turning RV705 and RV703 alternately, adjust for the valid display of light and dark areas of a gray scale. (The light area should not be made light enough for a fuzzy display of cross-hatches within the monoscopic circle, be sure to maintain the brightness of the dark area in a degree in which discrimination between the darkest area and second darkest area can scarecely be made.)

7-6-7. Focus Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape for operational checks (WR5-3CSP), monoscope portion
Adjusting Element	RV704

Adjuting method:

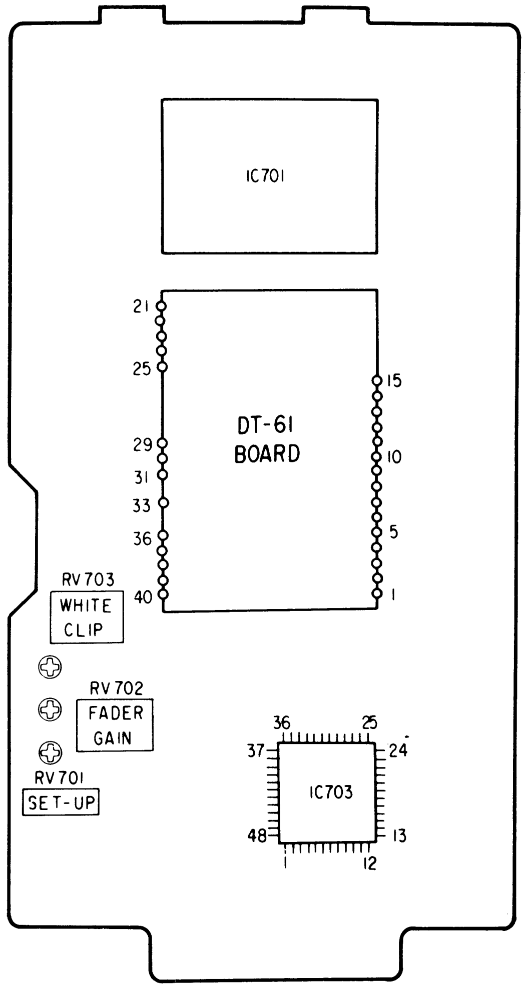
1) By turning RV704, adjust for the optimally focused images.

7-6-8. Horizontal and Vertical Amplitude Checks

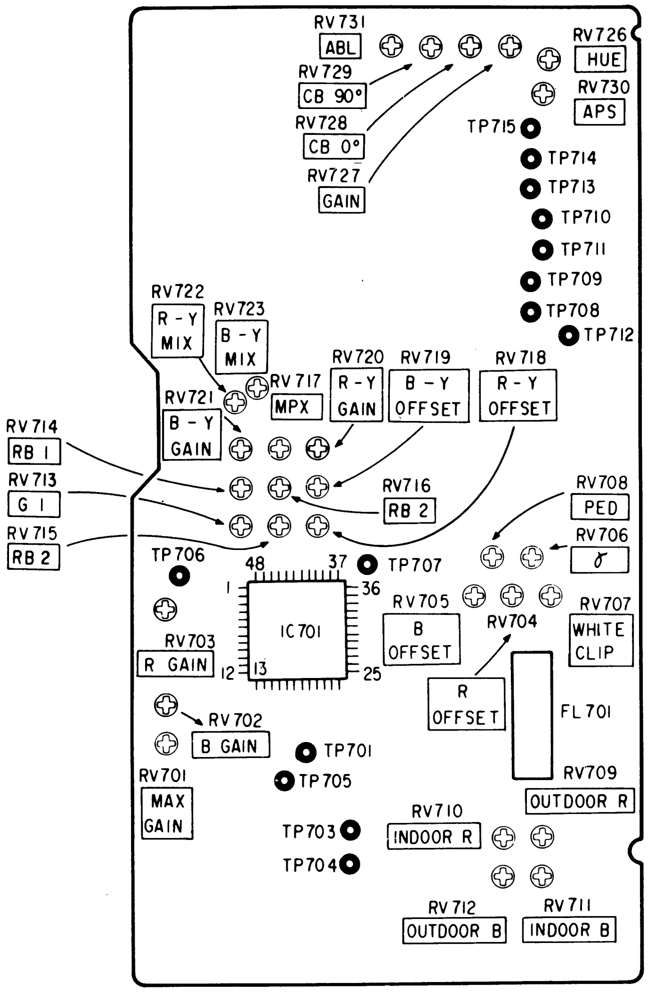
Specifications should have been met by 7-6-4. Horizontal amplitude adjustment and 7-6-5. Vertical amplitude adjustment, but if they are not, readjustments should be made. In the latter case, 7-6-6. Brightness, contrast adjustments and 7-6-7. Focusing adjustment should also be made over again.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

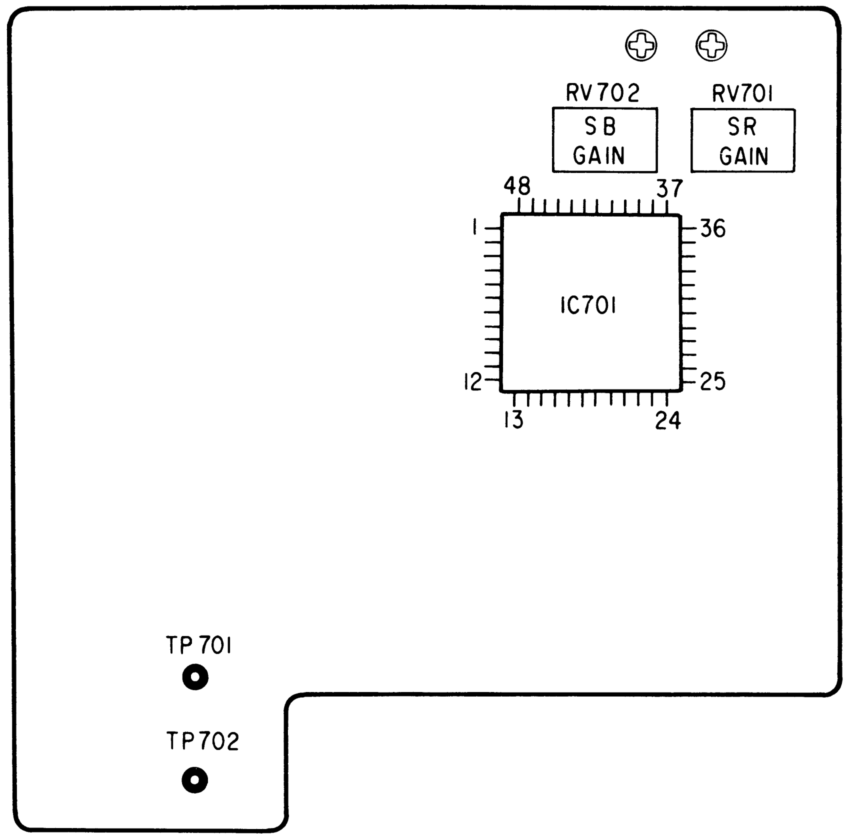
CP-18 BOARD (COMPONENT SIDE)


IC701
DT-61 BOARD
21
25
29
31
33
36
40
15
10
5
1
RV703 WHITE CLIP
RV702 FADER GAIN
RV701 SET-UP
IC703
36
25
37
24
48
13
1
12

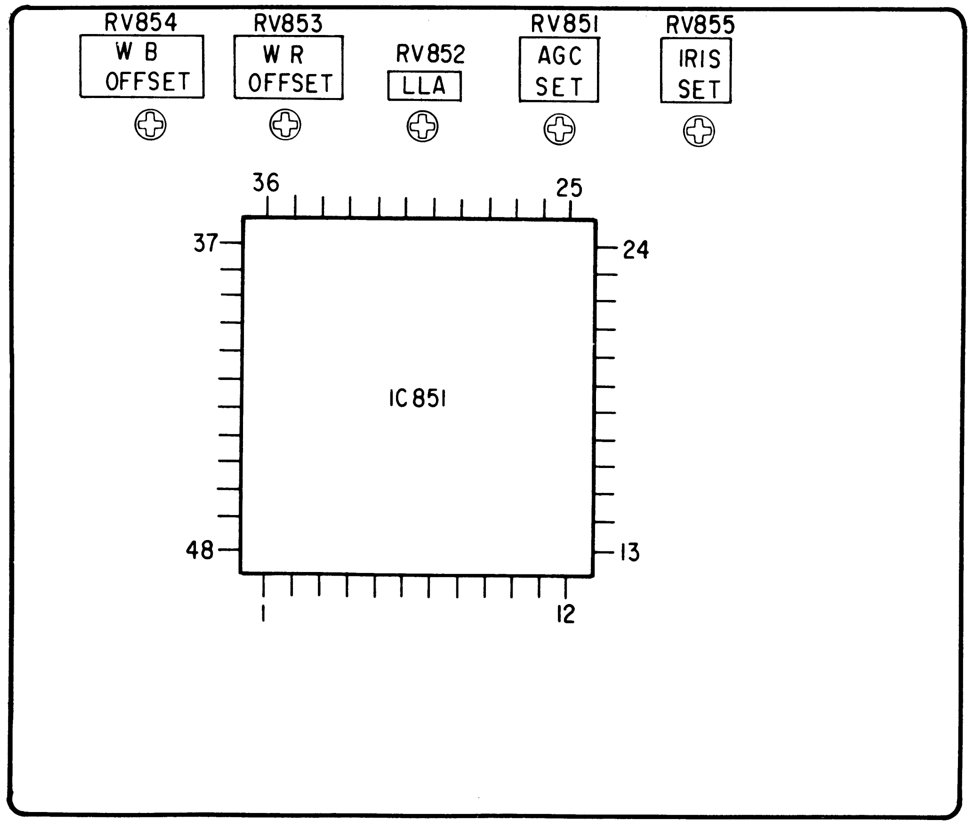
ME-4 BOARD (COMPOMENT SIDE)


RV731 ABL
RV729 CB 90°
RV728 CB 0°
RV727 GAIN
RV726 HUE
RV730 APS
TP715
TP714
TP713
TP710
TP711
TP709
TP708
TP712
RV722 R-Y MIX
RV723 B-Y MIX
RV717 MPX
RV720 R-Y GAIN
RV719 B-Y OFFSET
RV718 R-Y OFFSET
RV721 B-Y GAIN
RV714 RB 1
RV713 G 1
RV715 RB 2
RV716 RB 2
RV708 PED
RV706 γ
TP706
TP707
IC701
48
37
1
36
12
13
25
RV705 B OFFSET
RV704 R OFFSET
RV707 WHITE CLIP
RV703 R GAIN
RV702 B GAIN
FL701
TP701
TP705
RV701 MAX GAIN
RV709 OUTDOOR R
RV710 INDOOR R
TP703
TP704
RV712 OUTDOOR B
RV711 INDOOR B

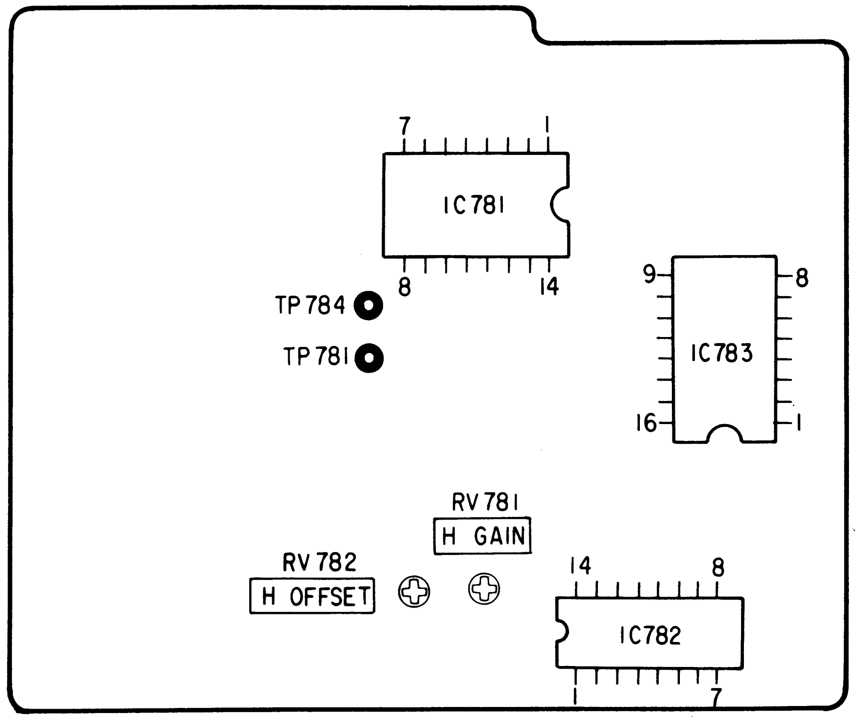
AW-3 BOARD (COMPONENT SIDE)


RV702 SB GAIN
RV701 SR GAIN
IC701
48
37
1
36
12
25
13
24
TP701
TP702

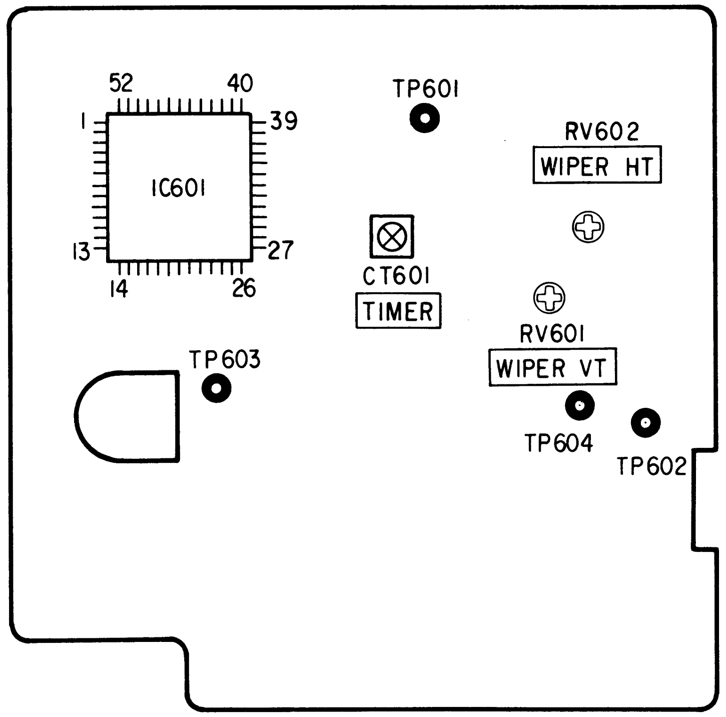
AT-5 BOARD (COMPONENT SIDE)


RV854 W B OFFSET
RV853 W R OFFSET
RV852 LLA
RV851 AGC SET
RV855 IRIS SET
IC851
36
25
37
24
48
13
1
12

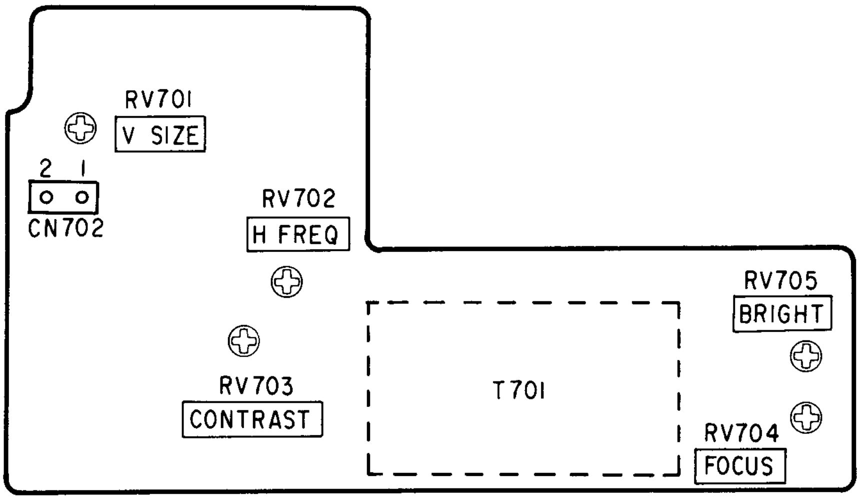
AI-1 BOARD (COMPONENT SIDE)


7
1
IC781
8
14
TP784
TP781
9
8
IC783
16
1
RV781
H GAIN
RV782
H OFFSET
14
8
IC782
1
7

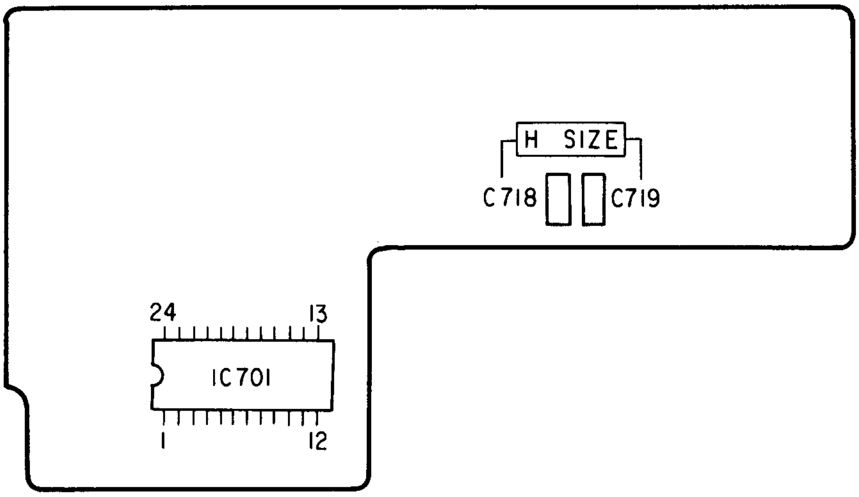
FC-10 BOARD (COMPONENT SIDE)


52
40
1
39
IC601
13
27
14
26
TP601
RV602
WIPER HT
CT601
TIMER
RV601
WIPER VT
TP603
TP604
TP602

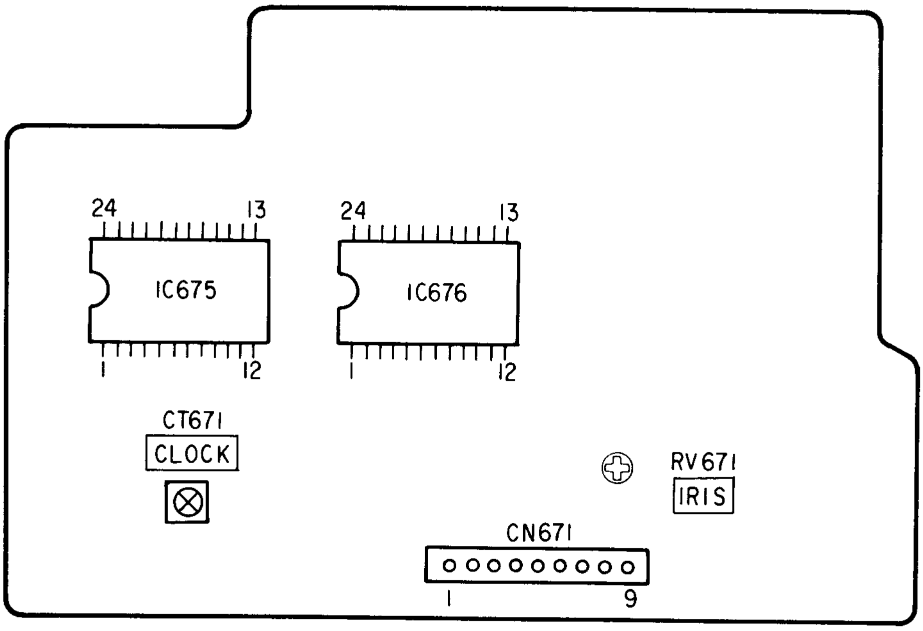
VF-7 BOARD (COMPONENT SIDE)


RV701
V SIZE
2 1
CN702
RV702
H FREQ
RV703
CONTRAST
T701
RV705
BRIGHT
RV704
FOCUS

VF-7 BOARD (SOLDERING SIDE)


H SIZE
C718
C719
24
13
IC701
1
12

CG-1 BOARD (COMPONENT SIDE)


24
13
IC675
1
12
24
13
IC676
1
12
CT671
CLOCK
RV671
IRIS
CN671
1
9

SECTION 8
MECHANISM ADJUSTMENTS

8-1. PREPARATION ITEMS FOR MECHANISM SECTION CHECKING, ADJUSTMENT AND REPLACEMENT

Note: Regarding removal of cabinet and respective boards, see Section 2. DISASSEMBLY.

8-1-1. Remounting of Cassette Compartment Assembly (See Fig. 8-1a)

1) Remount DEW assembly ❶ with screw ❷.
2) Remount cassette compartment assembly ❸ and tighten four screws ❹ by referring to Figs. 8-1a and lb. (At this point, care should be taken not to hit cassette compartment assembly ❸, so set the eject disk ❺ in the direction of arrow.)
3) Hook the harness on claw ❻.
4) Remount leaf switch ❼ with screw ❽.
5) See 2-10, and remount the DR-36 board.
6) See 2-8, and remount the AU-25 board and the TS-55 board.

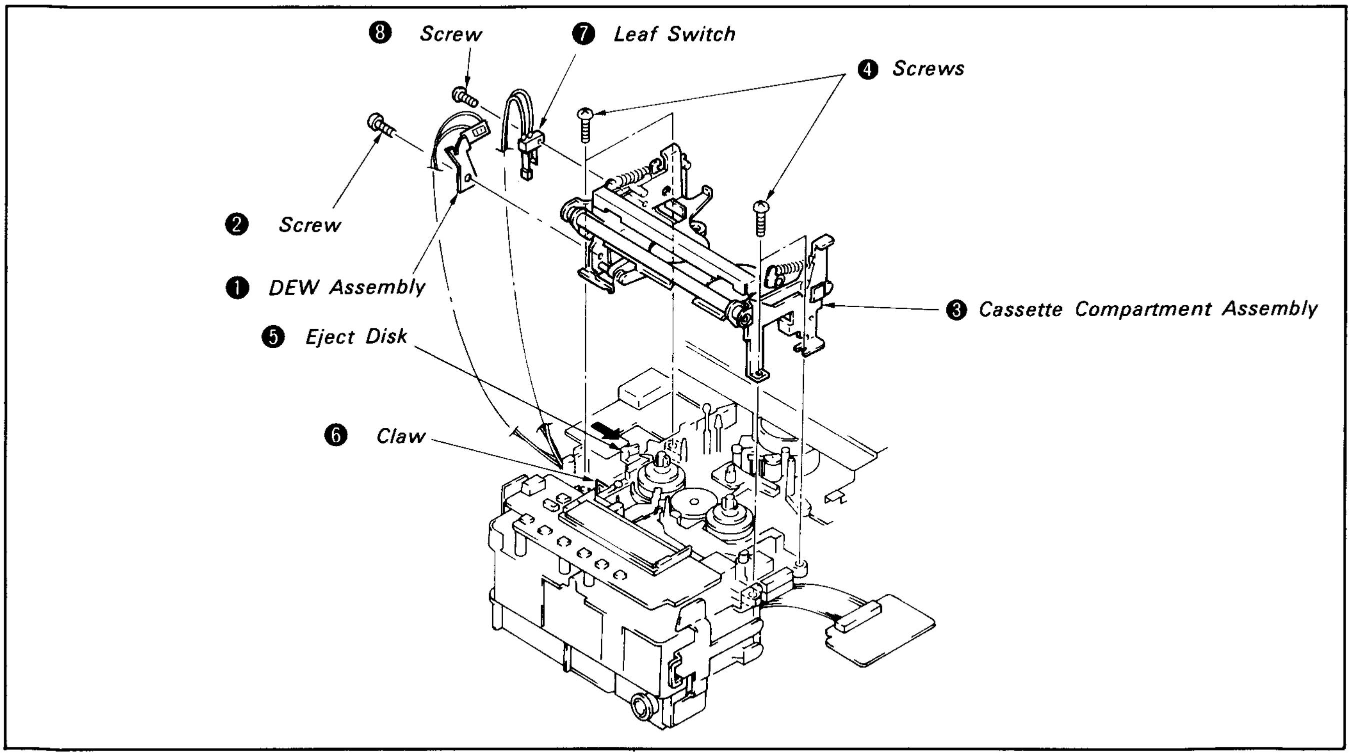

❽ Screw
❼ Leaf Switch
❹ Screws
❷ Screw
❶ DEW Assembly
❺ Eject Disk
❸ Cassette Compartment Assembly
❻ Claw

Fig. 8-1a.

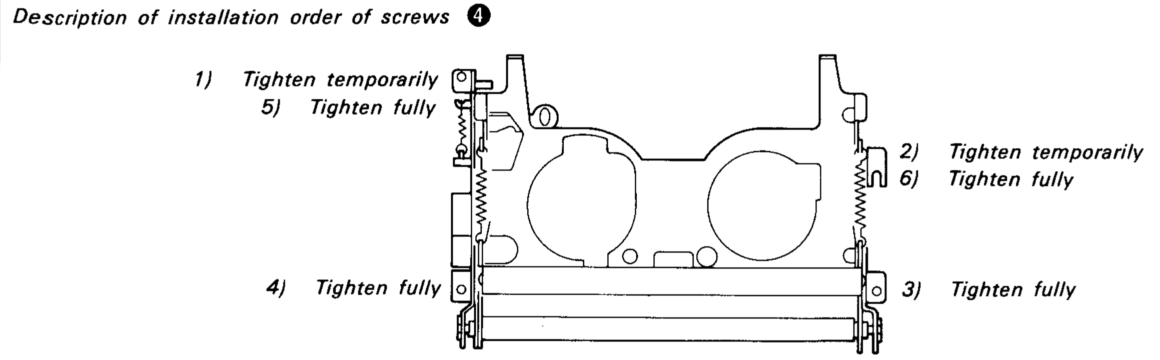

Description of installation order of screws ❹
1) Tighten temporarily
5) Tighten fully
2) Tighten temporarily
6) Tighten fully
4) Tighten fully
3) Tighten fully

Fig. 8-1b.

8-1-2. Operating without Cassette Compartment Assembly and a Tape

Note: Take note that if there is a strong light source near the set, there are cases in which the set may not operate.

1. Method to loading (See Fig. 8-2)

1) Mount a battery pack and turn ON power supply switch ❶.
2) Adhere tape onto the pin which extends from RECOG SW assembly ❷.
3) Turn ON the leaf switch ❸.

2. Method to set playback mode (See Fig. 8-2)

1) Mount a battery pack and turn ON power supply switch ❶.
2) Apply a rubber ring ❹ between S reel side and T reel side.
3) Press the playbak button and press tension Regulator arm assembly ❺ in the direction of arrow when the T reel side starts to rotate.
   (At this point, the tension Regulator band is released and the S reel side starts to rotate.)
4) Press the STOP button to stop.

3. Method to set recording mode (See Fig. 8-2)

1) Mount a battery pack and turn ON the power supply switch ❶.
2) Apply a rubber ring ❹ between S reel side and T reel side.
3) Press the RECORD button and press tension Regulator arm assembly ❺ in the direction of arrow when the T reel side starts to rotate.
   (At this point, the tension Regulator band is released and the S reel side starts to rotate.)
4) Press the STOP button to stop.

4. Method to eject

1) Press the EJECT button.

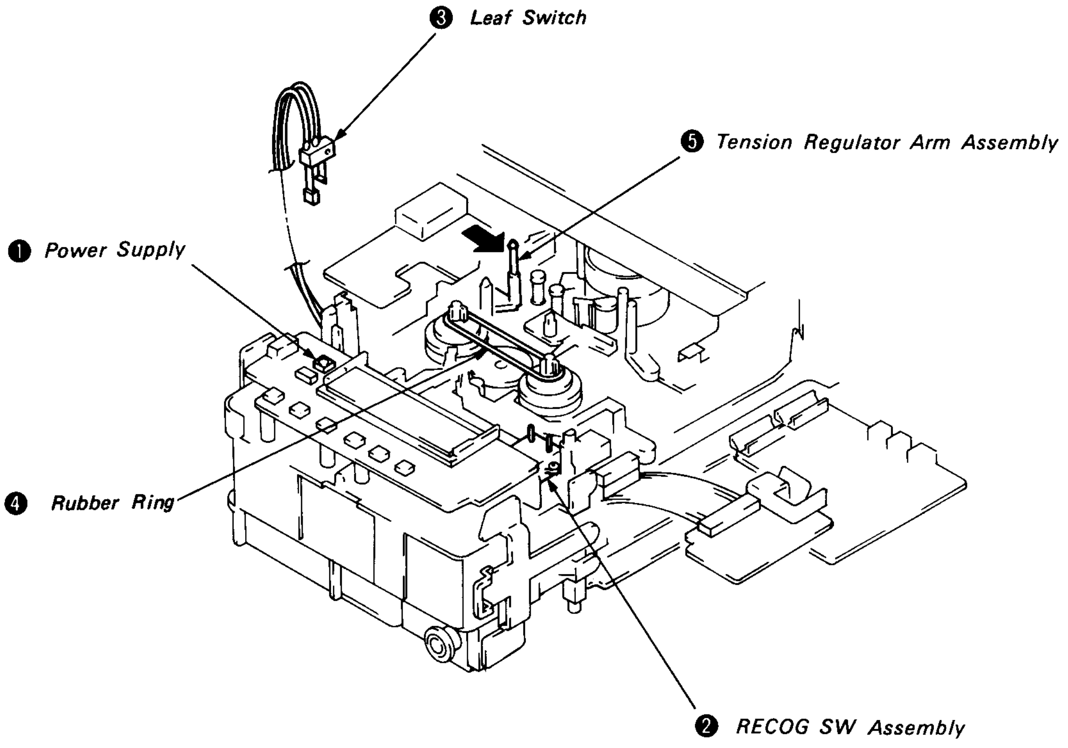


Fig. 8-2.

8-1-3. Mode Selector Operation

1. Selector parts (External view)

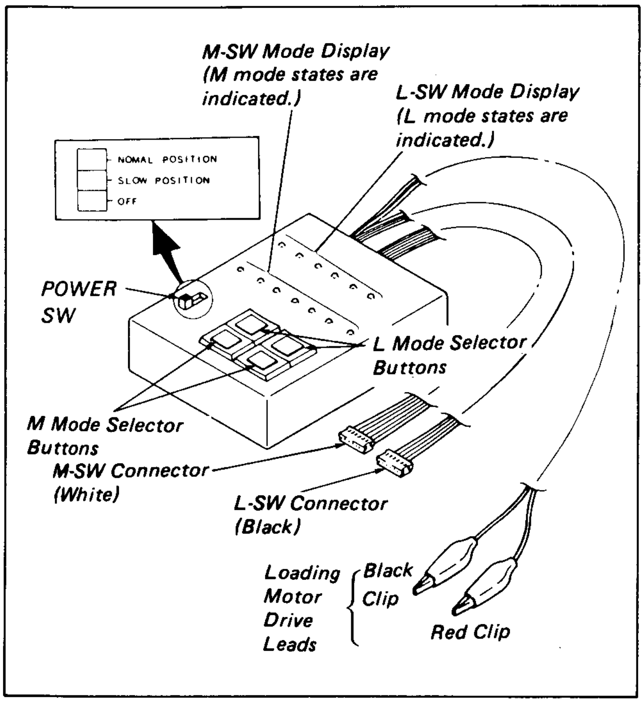

M-SW Mode Display
(M mode states are
indicated.)
L-SW Mode Display
(L mode states are
indicated.)
NOMAL POSITION
SLOW POSITION
OFF
POWER
SW
L Mode Selector
Buttons
M Mode Selector
Buttons
M-SW Connector
(White)
L-SW Connector
(Black)
Loading
Motor
Drive
Leads
Black
Clip
Red Clip

Fig. 8-3.

2. Connection

1) Plug the M-SW connector (6P connector, 6 harnesses, white) to the MS-4 Board (CN905) of the set.
2) Plug the L-SW connector (6P connector, 4 harnesses, black) to the LS-9 Board (CN904) of the set.
3) Connect each of red and black clip of the loading motor to each of red and gray loading motor drive lead wire, respectively. (See Fig. 8-3.)

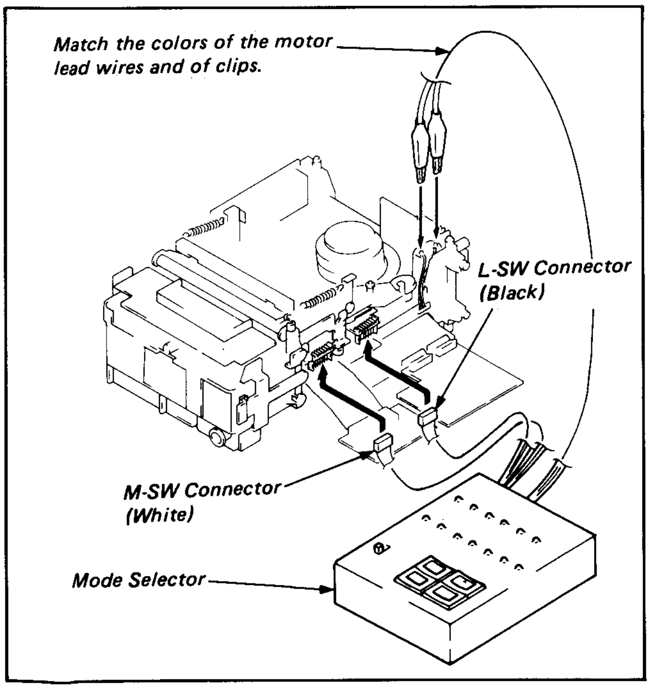

Match the colors of the motor
lead wires and of clips.
L-SW Connector
(Black)
M-SW Connector
(White)
Mode Selector

Fig. 8-4.

3. Precautions

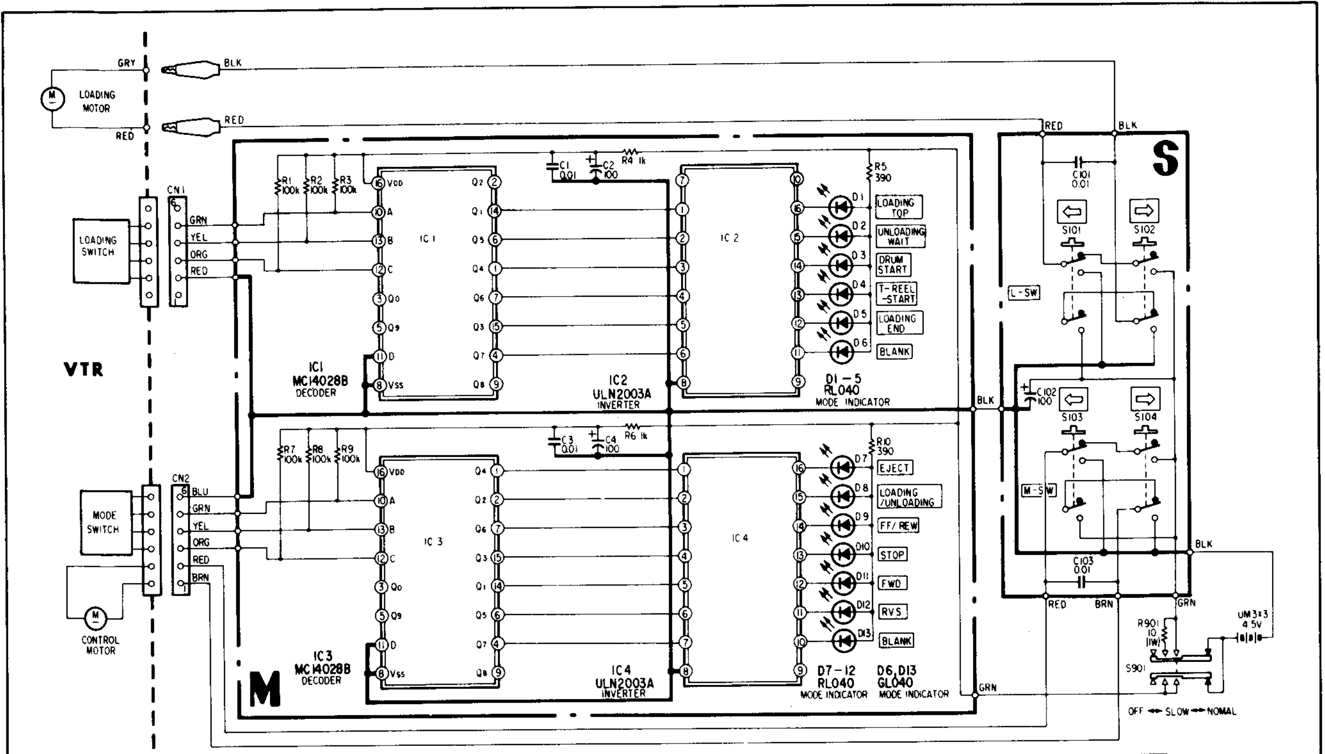
1) Make sure to set the M-SW mode to LOADING/UNLOADING when operating L-SW.
2) Make sure to set the L-SW mode to TOP or END when operating M-SW.

4. Operation

"BLANK" lights if each mode state is not set up during selection regardless of the L or M mode.

1) L Mode
   - Lighted to right sequentially from LOADING TOP to LOADING END when the righthand side button of the L mode selector buttons is kept pressing.
   - Keep pressing the selector button on the lefthand side to set up the desired mode in order to change from LOADING END to LOADING TOP.
   - The L mode operates more slowly in the slow position than in the normal position.
2) M Mode
   - Set L-SW to LOADING TOP to eject.
   - Set L-SW to LOADING END to change from FF/REW to RVS or from RVS to FF/REW.
   - Keep pressing the righthand side selector button of the M mode to light to right sequentially from EJECT to RVS.
   - Keep pressing the selector button on the lefthand side to set up the desired mode in order to change from RVS to EJECT.

5. Mode selector circuit diagram


GRY
BLK
LOADING MOTOR
RED
CN1
GRN
YEL
ORG
RED
LOADING SWITCH
VTR
CN2
BLU
GRN
YEL
ORG
RED
BRN
MODE SWITCH
CONTROL MOTOR
R1 100k
R2 100k
R3 100k
C1 0.01
C2 100
R4 1k
R5 390
IC1 MC14028B DECODER
IC2 ULN2003A INVERTER
LOADING TOP
UNLOADING WAIT
DRUM START
T-REEL -START
LOADING END
BLANK
D1-5 RL040 MODE INDICATOR
R7 100k
R8 100k
R9 100k
C3 0.01
C4 100
R6 1k
R10 390
IC3 MC14028B DECODER
IC4 ULN2003A INVERTER
EJECT
LOADING /UNLOADING
FF/REW
STOP
FWD
RVS
BLANK
D7-12 RL040 MODE INDICATOR
D6, D13 GL040 MODE INDICATOR
M
S
C101 0.01
S101
S102
L-SW
C102 100
S103
S104
M-SW
C103 0.01
RED
BLK
BRN
GRN
R901 10 (1W)
UM3×3 4.5V
S901
OFF ⟷ SLOW ⟷ NOMAL

M-SW (IC 3)

DECODER INPUT			MODE	LED NO.
C	B	A		
0	0	0		
0	0	1	FWD	D11
0	1	0	LOADING/UNLOADING	D8
0	1	1	STOP	D10
1	0	0	EJECT	D7
1	0	1	RVS	D12
1	1	0	FF/REW	D9
1	1	1	BLANK	D13

0: INPUT LEVEL L
1: INPUT LEVEL H

L-SW (IC 1)

DECODER INPUT			MODE	LED NO.
C	B	A		
0	0	0		
0	0	1	LOADING TOP	D1
0	1	0		
0	1	1	LOADING END	D5
1	0	0	DRUM START	D3
1	0	1	UNLOADING WAIT	D2
1	1	0	T-REEL-START	D4
1	1	1	BLANK	D6

SWITCH		DIRECTION OF MOTOR REVOLUTION
⇦	⇨	
OFF	OFF	STOP
ON	OFF	⇦
OFF	ON	⇨

⇦ L-SW LOADING END ← LOADING TOP
M-SW RVS ← EJECT

⇨ L-SW LOADING TOP ← LOADING END
M-SW EJECT ← RVS

6. Mode selector parts list

CAPACITOR

Ref. No.	Part No.	Description		
C1	1-108-579-00	MYLAR	0.01μF	50V
C2	1-123-333-00	ELECT	100μF	24V
C3	1-108-579-00	MYLAR	0.01μF	50V
C4	1-123-333-00	ELECT	100μF	24V
C101	1-108-579-00	MYLAR	0.01μF	50V
C102	1-123-333-00	ELECT	100μF	24V
C103	1-108-597-00	MYLAR	0.01μF	50V

DIODE

Ref. No.	Part No.	Description	
D1	8-719-812-31	DIODE	TLR123
D2	8-719-812-31	DIODE	TLR123
D3	8-719-812-31	DIODE	TLR123
D4	8-719-812-31	DIODE	TLR123
D5	8-719-812-31	DIODE	TLR123
D6	8-719-812-33	DIODE	TLG123A
D7	8-719-812-31	DIODE	TLR123
D8	8-719-812-31	DIODE	TLR123
D9	8-719-812-31	DIODE	TLR123
D10	8-719-812-31	DIODE	TLR123
D11	8-719-812-31	DIODE	TLR123
D12	8-719-812-31	DIODE	TLR123
D13	8-719-812-33	DIODE	TLG123A

IC

Ref. No.	Part No.	Description	
IC1	8-759-240-28	IC	TC4028BP
IC2	8-759-120-03	IC	μPA2003A
IC3	8-759-240-28	IC	TC4028BP
IC4	8-759-120-03	IC	μPA2003A

RESISTOR

Ref. No.	Part No.	Description		
R1	1-247-179-00	CARBON	100K	¼W
R2	1-247-179-00	CARBON	100K	¼W
R3	1-247-179-00	CARBON	100K	¼W
R4	1-247-131-00	CARBON	1K	¼W
R5	1-247-121-00	CARBON	390	¼W
R6	1-247-131-00	CARBON	1K	¼W
R7	1-247-179-00	CARBON	100K	¼W
R8	1-247-179-00	CARBON	100K	¼W
R9	1-247-179-00	CARBON	100K	¼W
R10	1-247-121-00	CARBON	390	¼W
R901	1-214-594-00	METAL	10	1W

8-2. PERIODIC CHECKING AND MAINTENANCE ITEMS

Maintenance and periodic checking should be performed as described below to demonstrate the set functions and performance fully, as well as for the sake of the machine and tapes. Provide the following maintenance work after a repair regardless of the duration of operation by the user.

8-2-1. Cleaning Rotary Drum Assembly

1) Lightly place chamois leather (Ref. No. J-2) moisted with a cleaning solution (Ref. No. J-1) on the rotary upper drum assembly and slowly rotate the rotary upper drum assembly counterclockwise by a finger to clean.

Note: Do not rotate the drum by the motor by turning on power or by rotating clockwise by a finger.
The chances of the head chip being damaged are very high if chamois leather is moved perpendicular to the head chip. Absolutely no cleaning method other than that described above should be used.

8-2-2. Tape Guide System Cleaning

1) Set up the cassette compartment assembly in an eject state and clean the tape guide system (No. 1 to 11 guides, capstan spindle and pinch roller) with chamois leather moisted with a cleaning solution. (See Fig. 8-5.)

8-2-3. Driving System Cleaning

1) Clean the drive system (timing belt and reel table surfaces) with a cloth moisted with a cleaning solution.

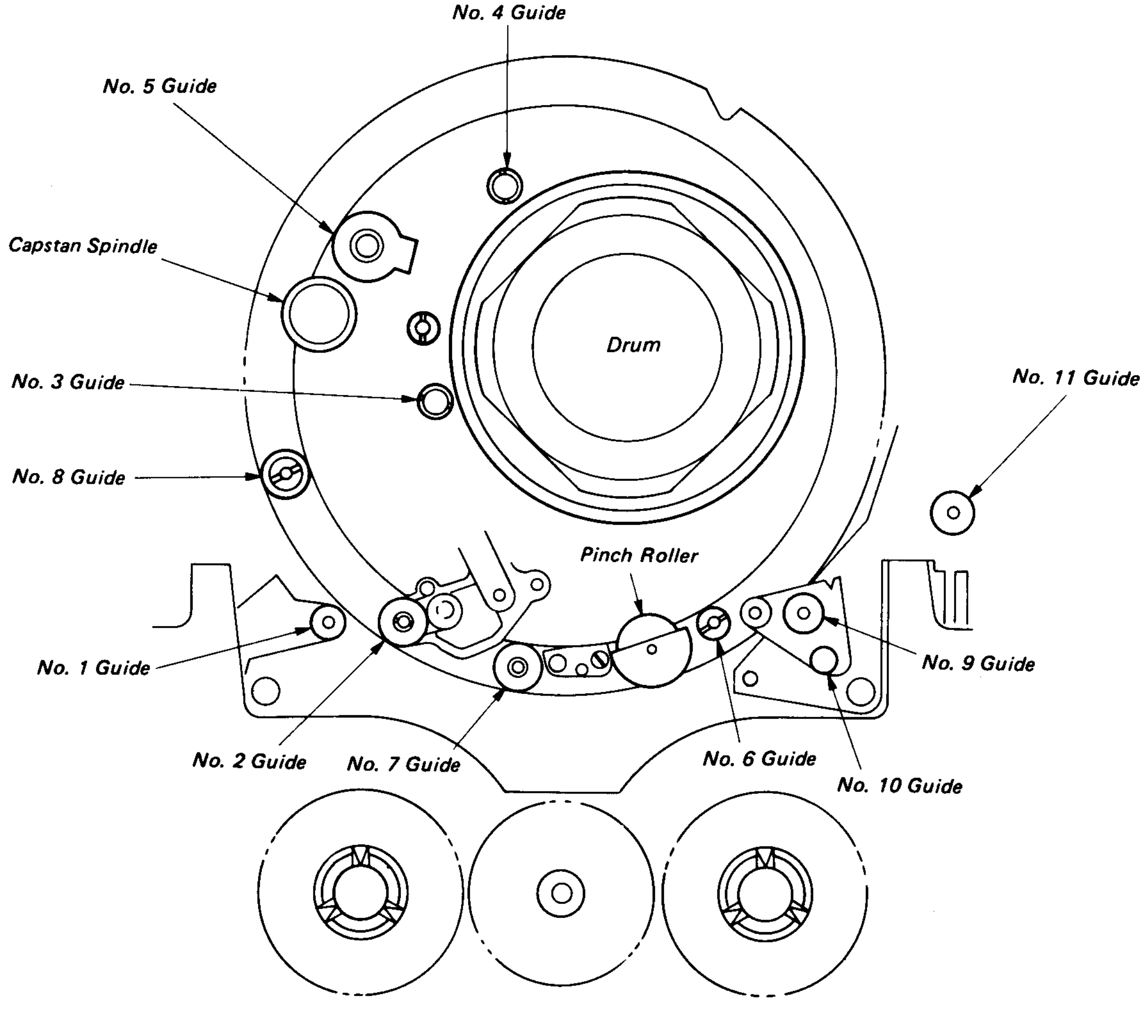

No. 4 Guide
No. 5 Guide
Capstan Spindle
Drum
No. 3 Guide
No. 11 Guide
No. 8 Guide
Pinch Roller
No. 1 Guide
No. 9 Guide
No. 2 Guide
No. 7 Guide
No. 6 Guide
No. 10 Guide

Fig. 8-5.

8-2-4. Periodic Check Items

Provide the following maintenance and checking depending on the user use duration.

○Cleaning ◎Oiling ★Replacement ☆Checking

Maintenance and Check Part		Hours in Operation (h)										Remarks
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Guide System	Cleaning of tape running surfaces	○	○	○	○	○	○	○	○	○	○	Avoid oil
	Cleaning and demagnetizing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Avoid oil
Drive System	L motor belt	○	○	○	○	○	○	○	★	○	○	3-686-546-01 Replace here, or every two years
	Timing belt	○	○	○	○	○	○	○	○	○	○	3-686-646-01
	Plunger solenoid	—	—	—	○	—	—	—	○	—	—	1-454-377-21
	Capstan bearing	—	◎	—	◎	—	◎	—	◎	—	◎	Absolutely avoid oil on tape running surfaces.
	Loading motor	—	☆	—	☆	—	☆	—	☆	—	☆	A-7040-031-A
	Control motor	—	☆	—	☆	—	☆	—	☆	—	☆	8-835-110-01
Performance Checking	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	—	☆	—	☆	—	☆	—	☆	—	☆	
	Brake system	—	☆	—	☆	—	☆	—	☆	—	☆	
	FWD / RVS } Torque measurement	—	☆	—	☆	—	☆	—	☆	—	☆	

Note: Replace parts in overhaul taking the foregoing items into consideration.

Note: SONY Oil

- Be sure to use SONY oil, always. (Various kinds of trouble may occur if the oil viscosity, etc. change.)
  SONY oil: Parts No. 7-661-018-01 (Mitsubishi Diamond oil Hydrofluid EP56)
- Be sure to use SONY oil completely free from dust, etc. mixed in it when oiling the bearings. (The bearings may wear and may be seized if oil mixed with dust, etc. is used.)
- One drop of oil is approximately the amount of oil on tip of a stick 2mm in diameter as shown in the diagram. (See Fig. 8-6.)

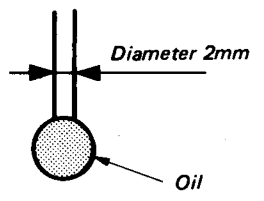


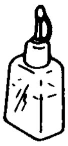
Fig. 8-6.

8-2-5. Summary of Servicing Tools

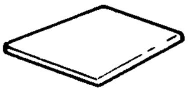
Ref. No.	Name	Part Code	Fixture No.	Use
J-1	Cleaning Fluid	Y-2031-001-0	——	
J-2	Chamois Cloth	2-034-697-00	——	
J-3	Head Demagnetizer		——	
J-4	Dental Mirror (handle) Dental Mirror (mirror)	J-6080-029-A J-6080-030-1	SL-5052	Tape Path
J-5	Alignment Tape (WR5-1C)	8-967-995-06		Tape Path
J-6	Dial Tension Gauge	J-6080-827-A		Measuring torques
J-7	Tension measuring reel	J-6080-831-A		With ϕ30 tape
J-8	Tension measuring reel	J-6080-832-A		With ϕ16 string
J-9	No. 10 gear phase matching	J-6080-823-A	GD-2047	
J-10	Rotary DRUM JIG	(Packaged with the rotary upper drum for repairs and replacement.)		
J-11	No. 6 Guide Lock JIG	J-6080-826-A		
J-12	FWD, RVS Take-up Torque Cassette	J-6080-824-A	GD-2086	
J-13	Mode Selector	J-6080-825-A		The whole
J-14	TRACK SHIFT & MONITOR JIG	J-6080-851-A		Tape path
J-15	RF/SWP Connector	J-6080-843-3		Tape path
J-16	CTL Connector	J-6080-859-A		Tape path

Other equipment: Oscilloscope
Analog Tester (20kΩ)

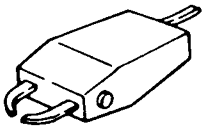
J-1



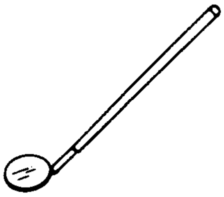
J-2



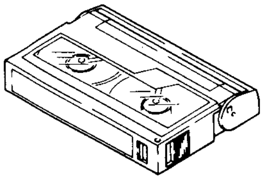
J-3



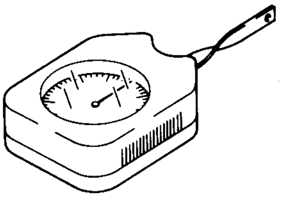
J-4



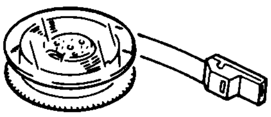
J-5



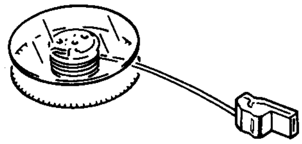
J-6



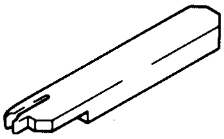
J-7



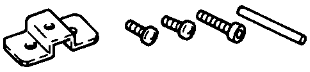
J-8



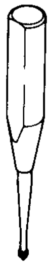
J-9



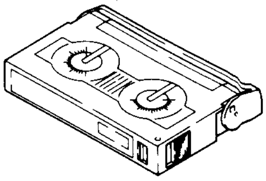
J-10
(Packaged with the rotary upper drum for repairs and replacement.)



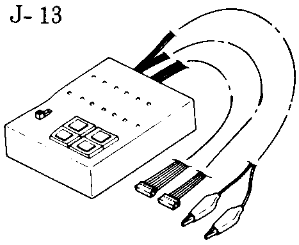
J-11



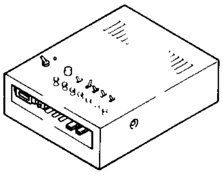
J-12



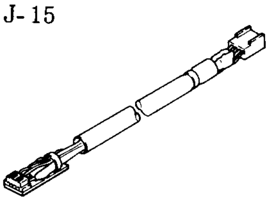
J-13



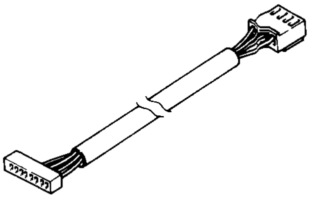
J-14



J-15



J-16



8-3. MECHANISM SECTION CHECKING, ADJUSTMENT AND REPLACEMENT

Note:
- Use a mode selector (Ref. No. J-13) to check, adjust, and replace this mechanism section.
- The modes in $\boxed{}$ are set up by pressing the mode selector buttons.

8-3-1. S Reel Table Assembly

1. Removal

1) Remove the cassette compartment assembly as instructed in 2-11.
2) Set up the $\boxed{\text{FF/REW}}$ mode.
3) Remove the screw ❶ and reel table stopper ❷ .
4) Remove the REV brake ❸ .
5) Remove the S reel table assembly ❹. (See Fig. 8-7.)

Note: Be sure to hold the upper click part in hand when removing. (See the Note in Fig. 8-7.)

2. Remounting

1) Oil half a drop of oil on the upper spherical part of the spindle ❺ .
2) Move the S main brake assembly ❻ toward the arrow .
3) Remount the S reel table assembly ❹ not to touch the tension regulator band assembly ❼ .

Note: Be sure to hold the upper click part in hand when mounting. (See the Note in Fig. 8-7.)

4) Remount the REV brake ❸ .
5) Remount the reel table stopper ❷ and tighten the screw ❶. (See Fig. 8-7.)
6) Set up the $\boxed{\text{LOADING/UNLOADING}}$ mode.
7) Remount the cassette compartment assembly as instructed in 8-1-1.
8) Perform FWD back tension adjustment of 8-3-21.

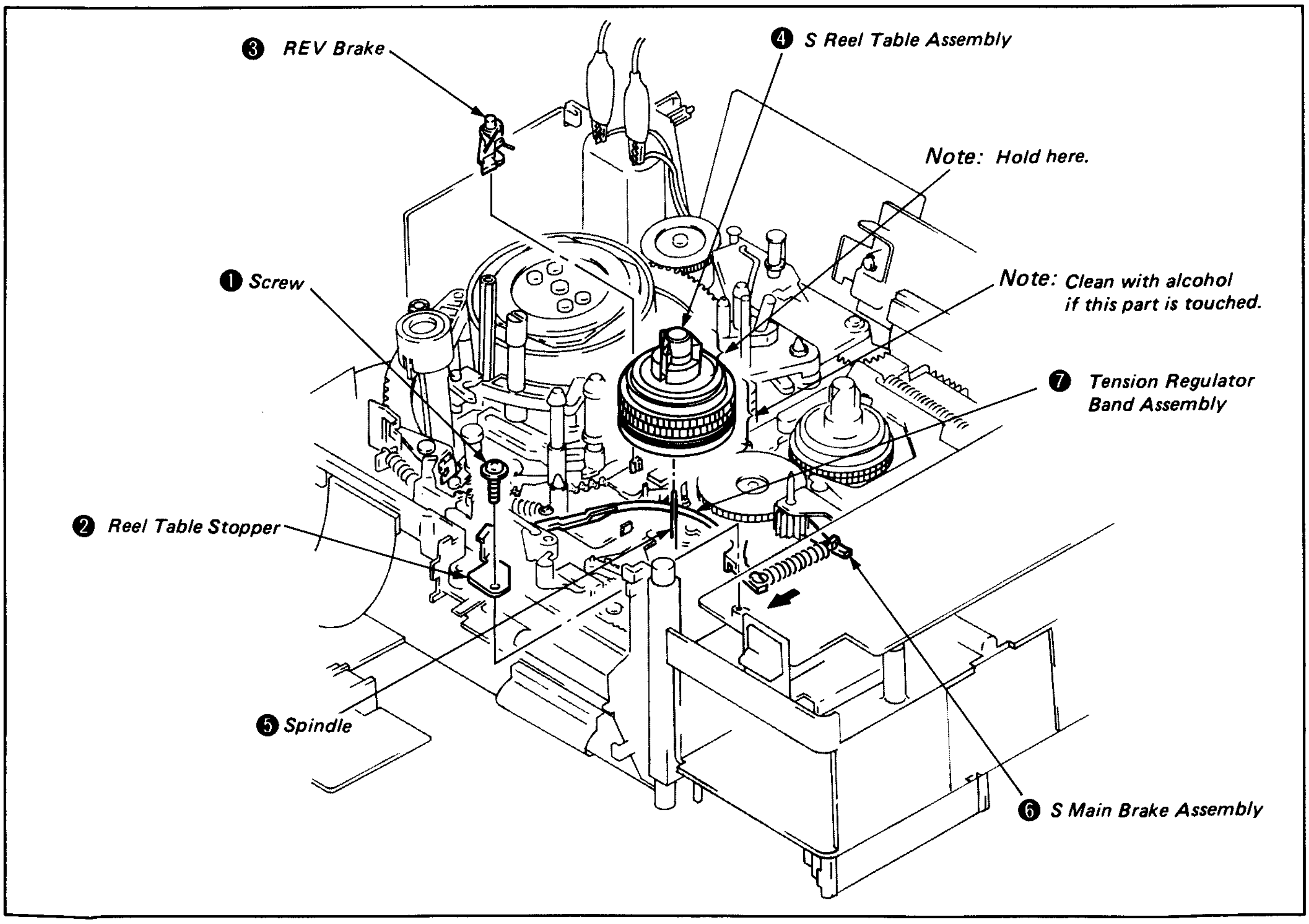

❸ REV Brake
❹ S Reel Table Assembly
Note: Hold here.
❶ Screw
Note: Clean with alcohol if this part is touched.
❼ Tension Regulator Band Assembly
❷ Reel Table Stopper
❺ Spindle
❻ S Main Brake Assembly

Fig. 8-7.

8-3-2. T Reel Table Assembly

1. Removal

1) Remove the cassette compartment assembly as instructed in 2-11.
2) Set up the UNLOADING WAIT mode.
3) Hook the spring ❷ tying the T soft brake ❶ on the click of the lock slider.
4) Remove the stopper washer ❸ and T soft brake ❶
5) Set up the EJECT mode.
6) Move the drive gear (B) ❹ toward the arrow.
7) Remove the T reel table assembly ❺. (See Fig. 8-8.)

Note: Be sure to hold the upper click part in hand when removing. (See the Note in Fig. 8-7.)

2. Remounting

1) Oil half a drop of oil on the upper spherical part of the spindle ❻.
2) Move the drive gear (B) ❹ toward the arrow. (Check that the EJECT mode is set up.)
3) Remount the T reel table assembly ❺.
4) Remount the T soft brake ❶ and stop washer ❸.
5) Rehook the spring ❷ on the click of the T soft brake ❶. (See Fig. 8-8.)
6) Set up the LOADING TOP and LOADING/UNLOADING modes.
7) Remount the cassette compartment assembly as instructed in 8-1-1.

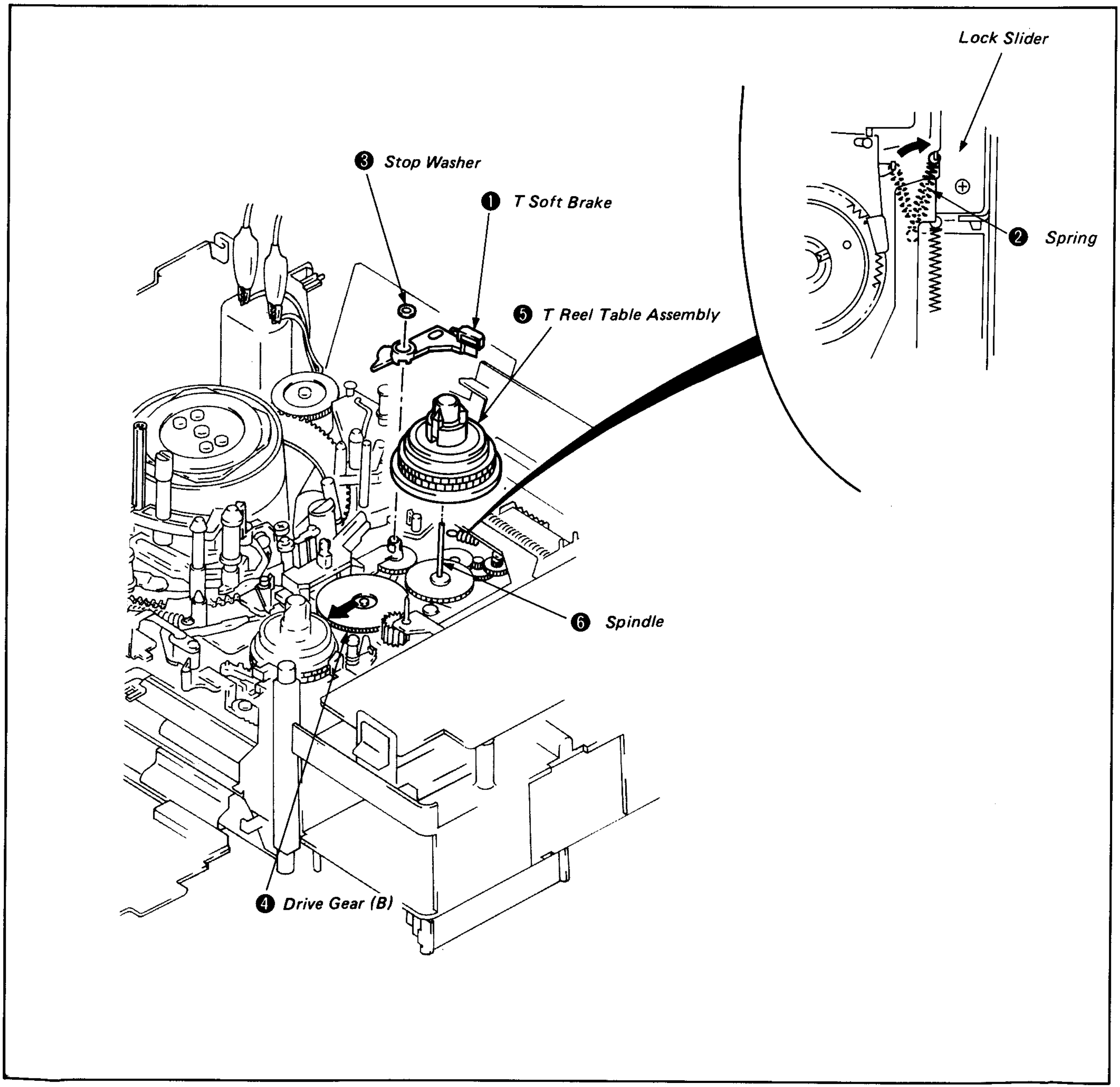


Fig. 8-8.

8-3-3. Pinch Pressure Arm Assembly

1. Removal

1) Hook the spring ❶ on the pinch press arm assembly ❷ .
2) Remove the stop washer ❸ and pinch press arm assembly ❷. (See Fig. 8-9.)

2. Remounting

1) Oil half a drop of oil on the spindle ❹ .
2) Remount the pinch press arm assembly ❷ and stop washer ❸ .
3) Rehook the spring ❶ on the tension regulator spring hook assembly ❺ . (See Fig. 8-9.)

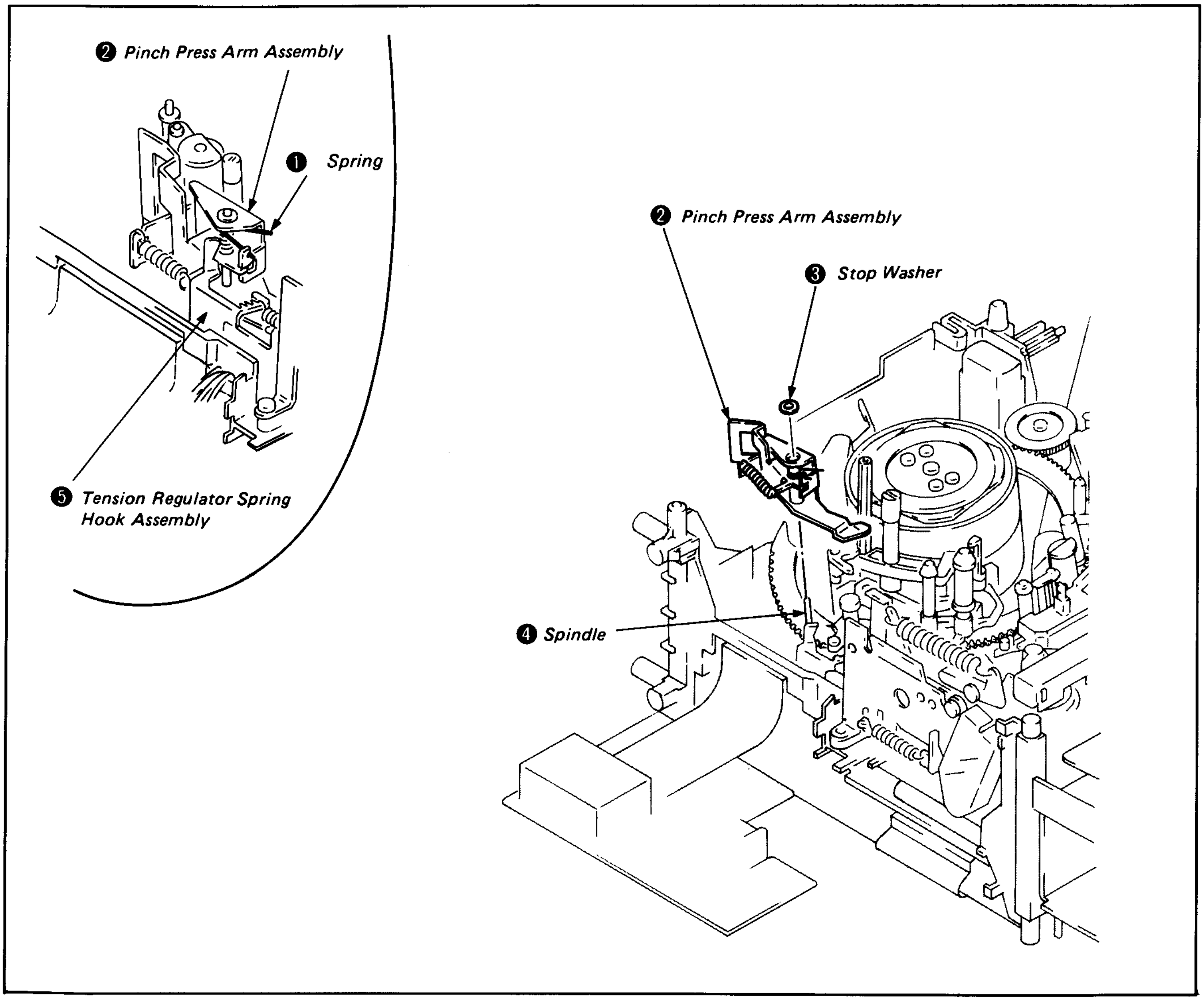

❷ Pinch Press Arm Assembly
❶ Spring
❺ Tension Regulator Spring Hook Assembly
❷ Pinch Press Arm Assembly
❸ Stop Washer
❹ Spindle

Fig. 8-9.

8-3-4. Tension Regulator Arm Assembly

1. Removal

1) Remove the cassette compartment assembly as instructed in 2-11.
2) Change the hooking position of the spring as instructed in 1) of Removal in 1. of 8-3-3.
3) Remove the spring ❶ . (Write down the spring hooking position).
4) Remove the screw ❷ and tension regulator spring hook assembly ❸ .
5) Set up the FF/REW mode.
6) Disengage the click ❹ of the tension regulator band assembly.
7) Remove the tension regulator arm assembly ❺ . (See Fig. 8-10.)

2. Remounting

1) Oil half a drop of oil on the spindle ❻ .
2) Remount the tension regulator arm assembly ❺ inserting the tension regulator load arm assembly pin ❼ in the cam groove on the rear side of the tension regulator arm assembly ❺ .
3) Reengage the tension regulator band assembly click ❹ . (Do not touch or deform the band.)
4) Set up the LOADING/UNLOADING mode.
5) Remount the tension regulator spring hook assembly ❸ and tighten the screw ❷ .
6) Rehook the spring ❶ in the previous position and lock the screw. (See Fig. 8-10.)
7) Rehook the spring as instructed in 3) of Remounting in 2. of 8-3-3.
8) Remount the cassette compartment assembly as instructed in 8-1-1.

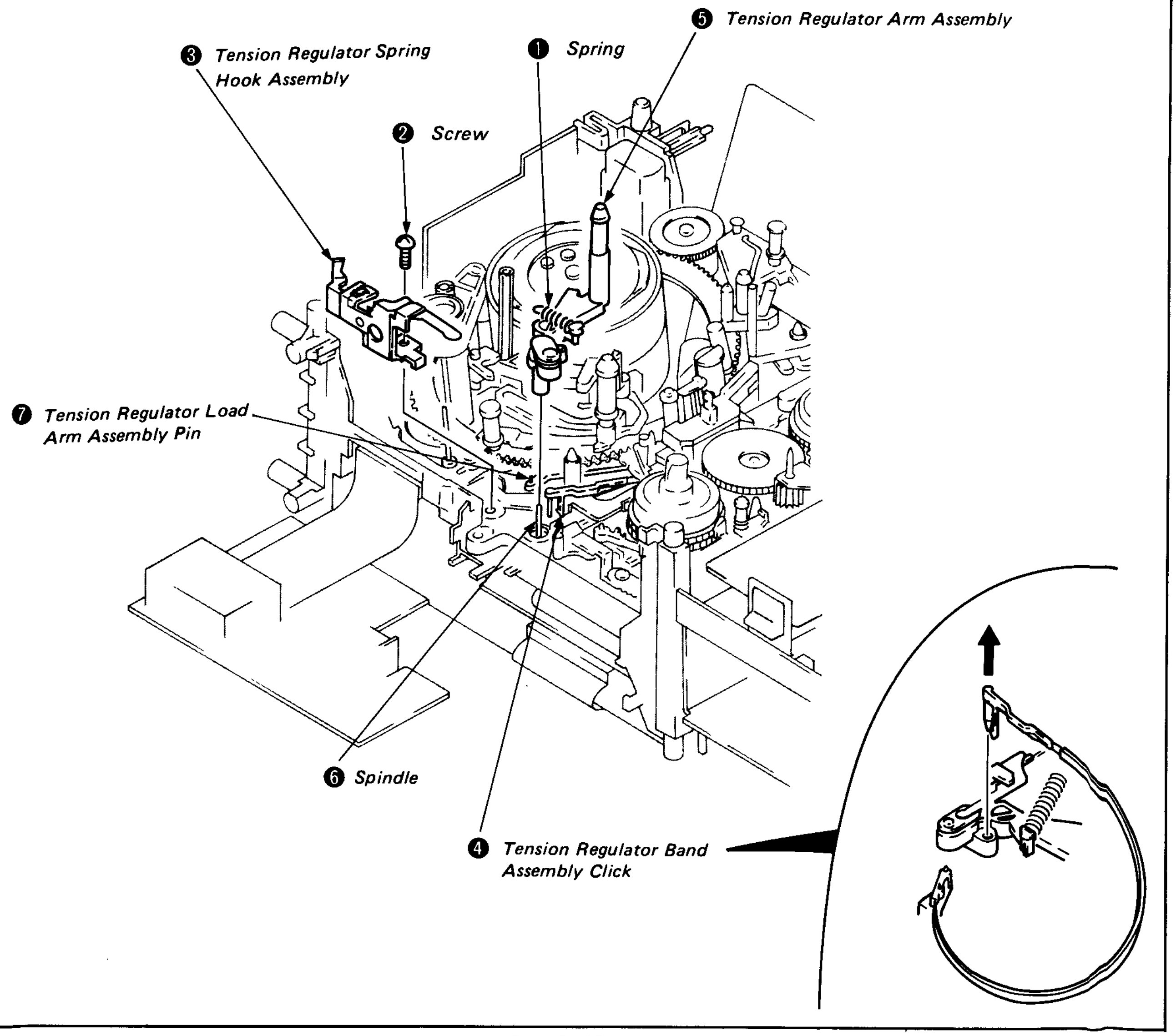

❺ Tension Regulator Arm Assembly
❸ Tension Regulator Spring Hook Assembly
❶ Spring
❷ Screw
❼ Tension Regulator Load Arm Assembly Pin
❻ Spindle
❹ Tension Regulator Band Assembly Click

Fig. 8-10.

8-3-5. Tension Regulator Band Assembly

1. Removal

1) Remove the S reel table assembly as instructed in 8-3-1.
2) Disengage the band arm assembly click ❶ .
3) Disengage the click ❷ and remove the tension regulator band assembly ❸ . (See Fig. 8-11.)

2. Remounting

1) Remount the tension regulator band assembly ❸ . (Do not touch or deform the band.)
2) Reengage the band arm assembly click ❶ . (See Fig. 8-11.)
3) Remount the S reel table assembly as instructed in 8-3-1.
4) Adjust the FWD back tension as instructed in 8-3-21.

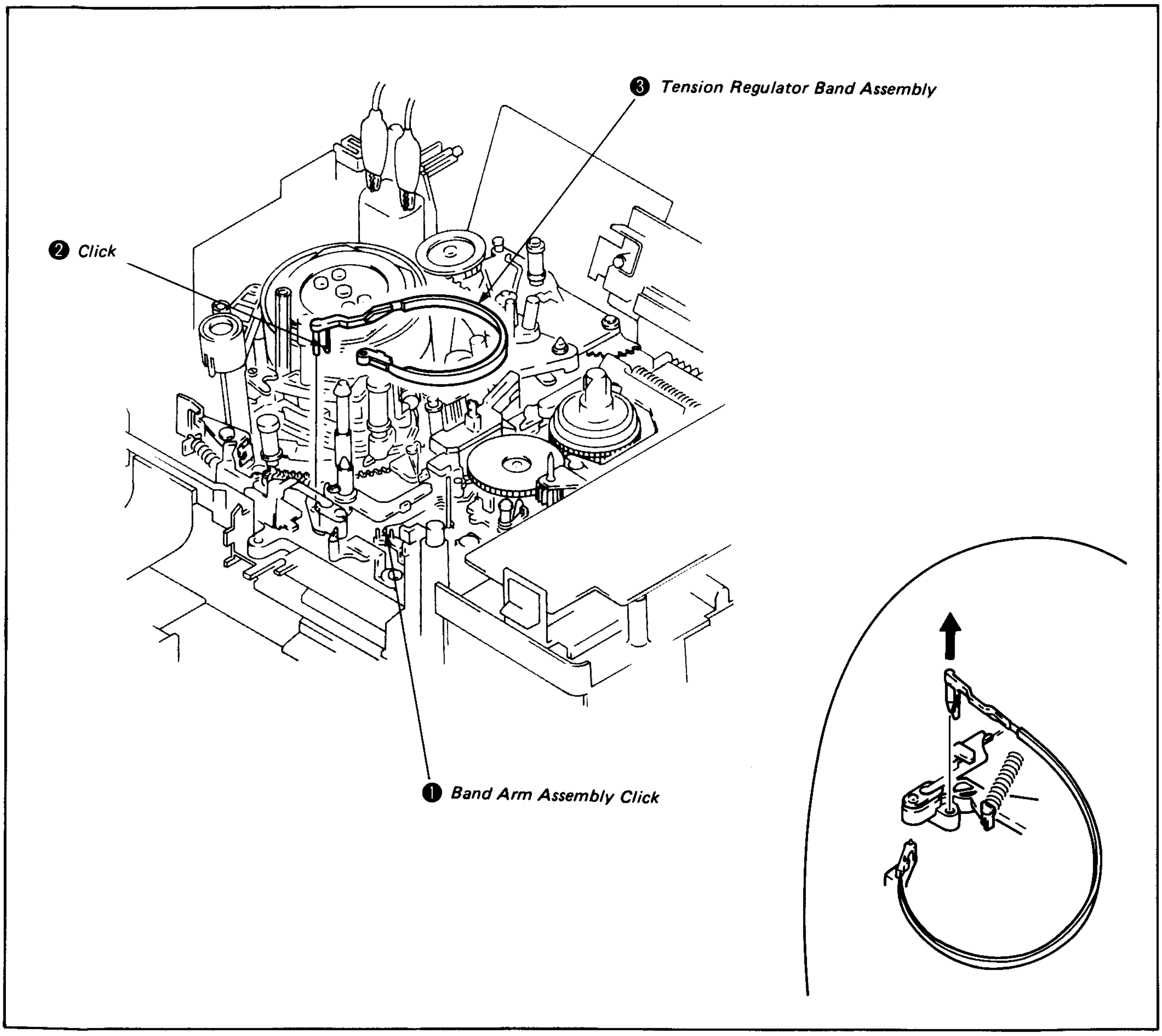

❸ Tension Regulator Band Assembly
❷ Click
❶ Band Arm Assembly Click

Fig. 8-11.

8-3-6. Loading Motor Assembly

1. Removal

1) Open the SS-64 Board as instructed in 2-13.
2) Remove the L motor belt ❶.
3) Disconnect the connector ❷ CN302 (white) 2P from the RS-18 Board.
4) Remove the two screws ❸ and loading motor assembly ❹. (See Fig. 8-12.)

2. Remounting

1) Remount the loading motor assembly ❹ and tighten the two screws ❸.
2) Reconnect the connector ❷ CN302 (white) 2P to the RS-18 board.
3) Remount the L motor belt ❶. (See Fig. 8-12.)
4) Reassemble the circuit boards reversing the sequence.

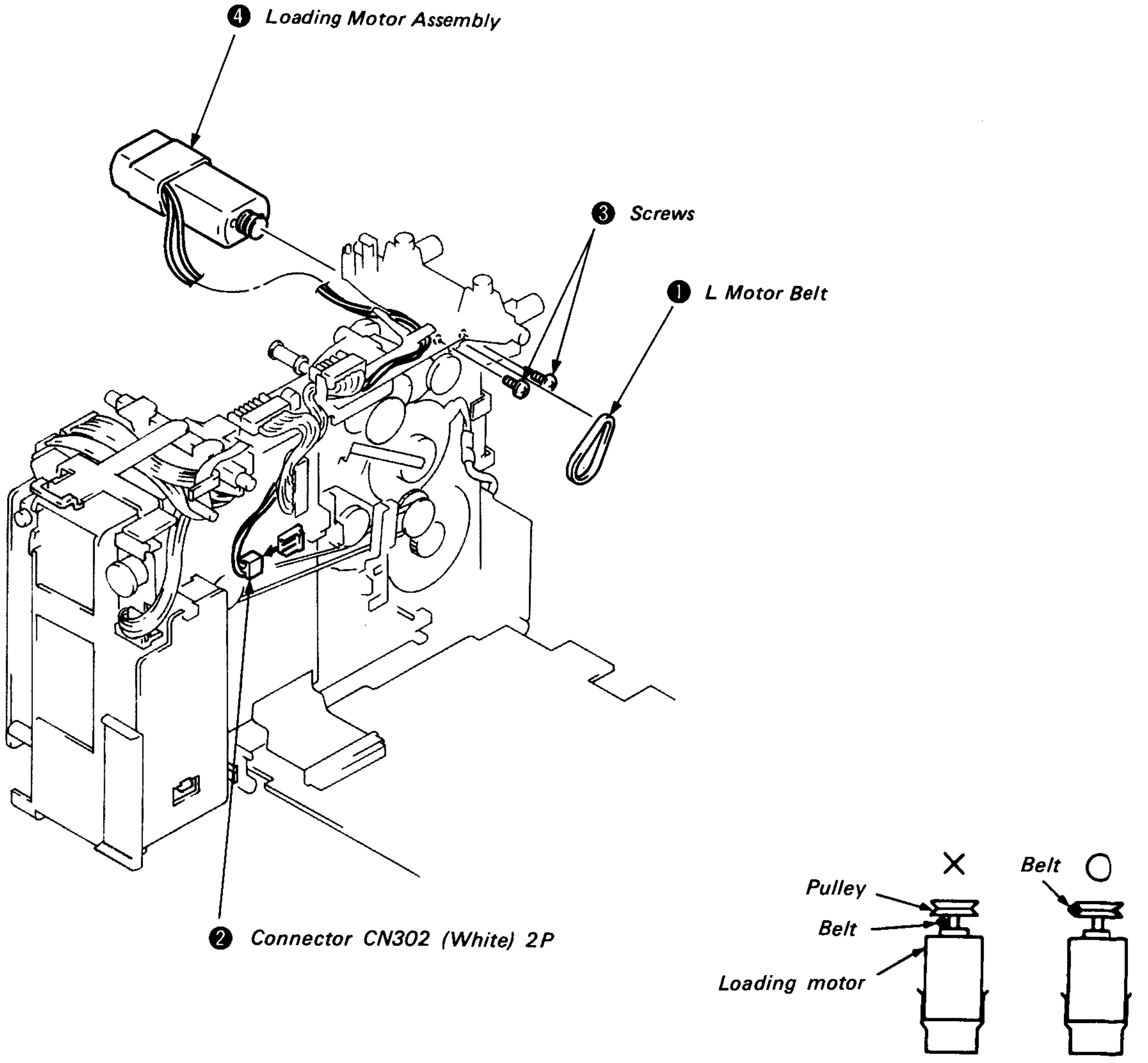

❹ Loading Motor Assembly
❸ Screws
❶ L Motor Belt
❷ Connector CN302 (White) 2P
×
Belt ○
Pulley
Belt
Loading motor

Fig. 8-12.

8-3-7. Loading Ring Assembly

1. Removal

1) Operate the mode selectors to move the guide base assembly ❶ to immediately before the lock and the No. 2 guide ❷ to the position where the screw of the ring stopper ❸ immediately before the lock. (Do not move the loading ring assembly ⓫ .)
2) Remove the stop washer ❹ and disengage the No. 10 gear assembly ❺ .
3) Remove the screw ❻ , roller retainer ❼ and roller ❽ .
4) Remove the two screws ❾ , ring stopper ❸ and roller ❿ .
5) Remove the loading ring assembly ⓫ in the arrow direction. (See Fig. 8-13.)

Note: Care should be taken not to strike the drum when removing the loading ring assembly ⓫ .

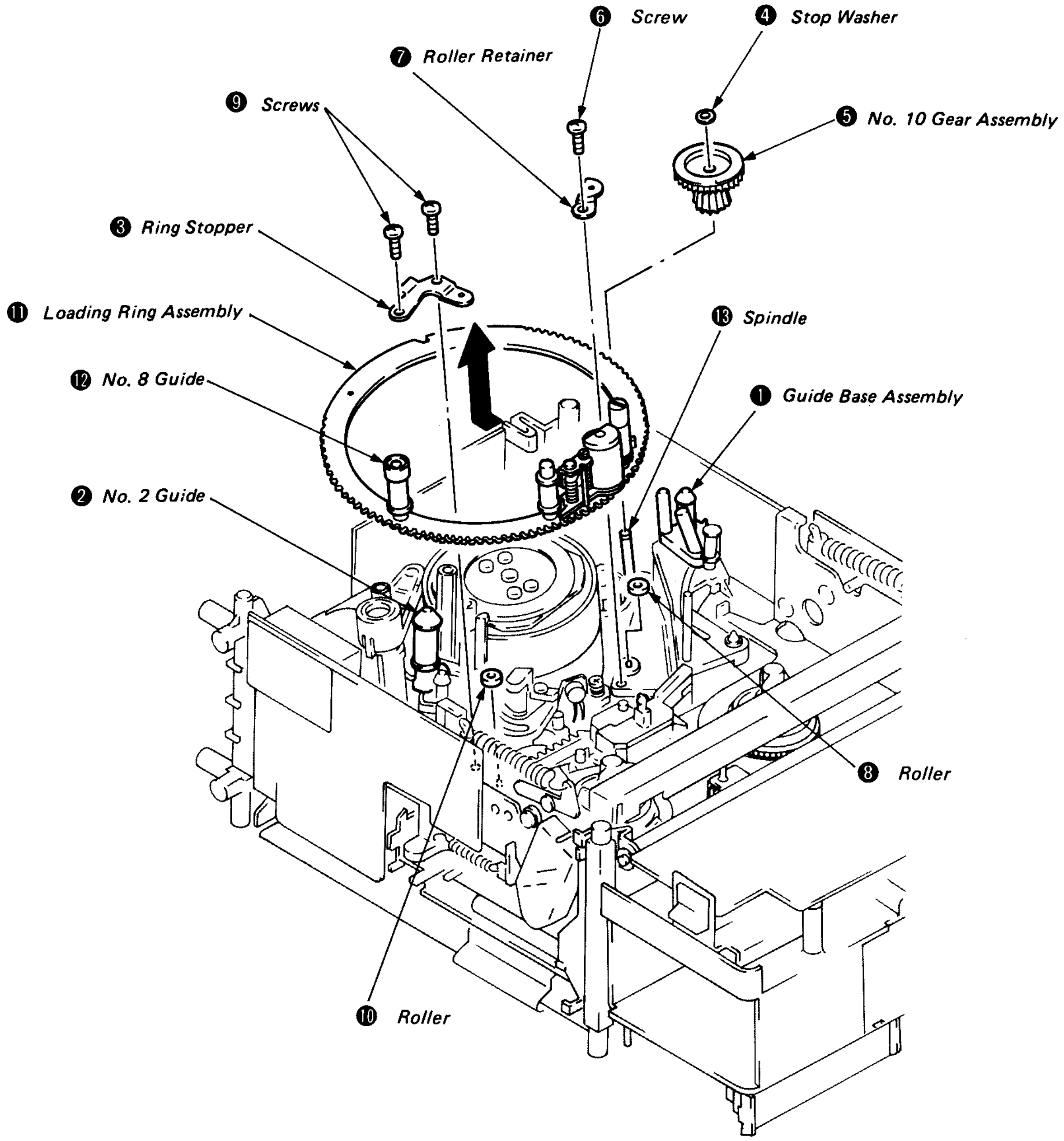

❻ Screw
❹ Stop Washer
❼ Roller Retainer
❾ Screws
❺ No. 10 Gear Assembly
❸ Ring Stopper
⓫ Loading Ring Assembly
⓭ Spindle
⓬ No. 8 Guide
❶ Guide Base Assembly
❷ No. 2 Guide
❽ Roller
❿ Roller

Fig. 8-13.

2. Remounting

1) Remount the loading ring assembly ⑪ in an unthreading condition (with the pinch roller moved to the camera section side). (Check that the loading ring assembly is in the condition of 1) of Removal.)
2) Remount the roller ⑩ and ring stopper ③ and tighten the two screws ⑨ . (The No. 8 guide ⑫ should be located near the control panel than the ring stopper ③ .)
3) Remount the roller ⑧ and roller retainer ⑦ and tighten the screw ⑥ . (Check that the loading ring assembly fits the three rollers.)
4) Oil half a drop of oil on the spindle ⑬ . (See Fig. 8-13.)
5) Check that the tooth of the drive changer is engaging the dent of the L-SW assembly and plug the No. 10 gear phase alignment jig (Ref. No. J-9) (See Fig. 8-14.)
6) Remount the No. 10 gear ⑤ and stop washer ④ pressing the No. 8 guide ⑫ to the ring stopper ③ .
7) Pull out the No. 10 gear phase alignment jig.
8) Set up the LOADING TOP mode.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

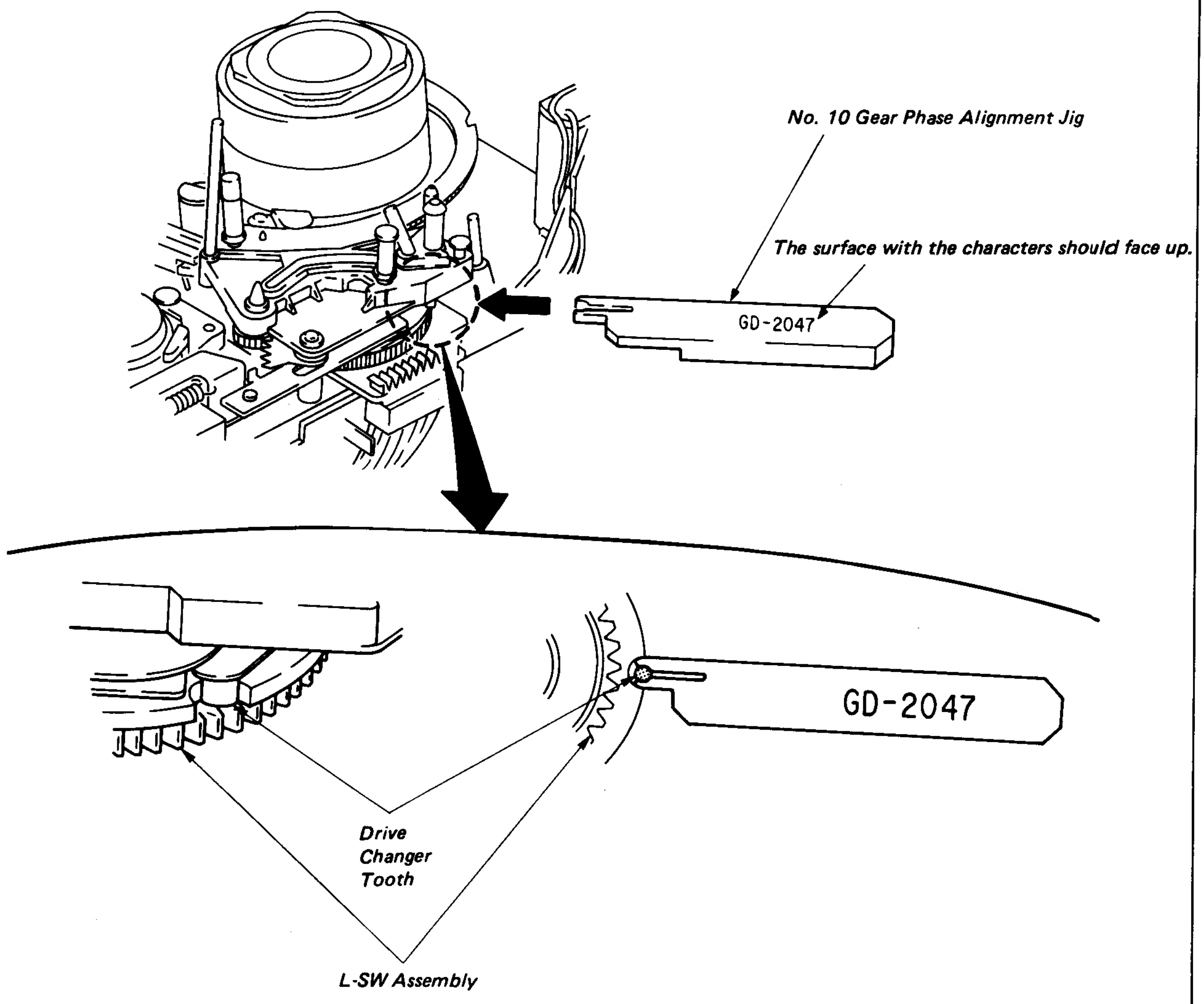

No. 10 Gear Phase Alignment Jig
The surface with the characters should face up.
GD-2047
GD-2047
Drive Changer Tooth
L-SW Assembly

Fig. 8-14.

8-3-8. Pinch Roller Assembly

1. Removal

1) Remove the loading ring assembly as instructed in 8-3-7.
2) Remove the stop washer ❶. (See Fig. 8-15.)
3) Change the hooking position of the spring ❸ on the No. 7 guide assembly ❷. (See Fig. 8-16.)
4) Rotate the pinch roller assembly ❹ in the arrow direction. (See Fig. 8-17.)
5) Remove the pinch roller assembly ❹ toward the arrow. (See Fig. 8-18.)
6) Remove the spring ❸. (See Fig. 8-19.)

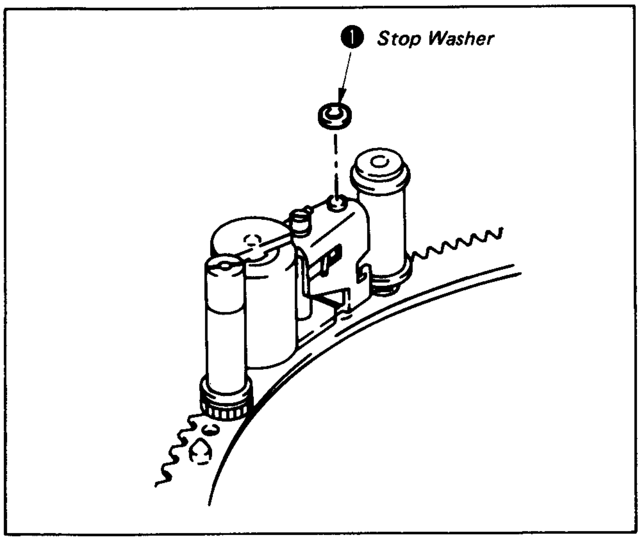

❶ Stop Washer

Fig. 8-15.

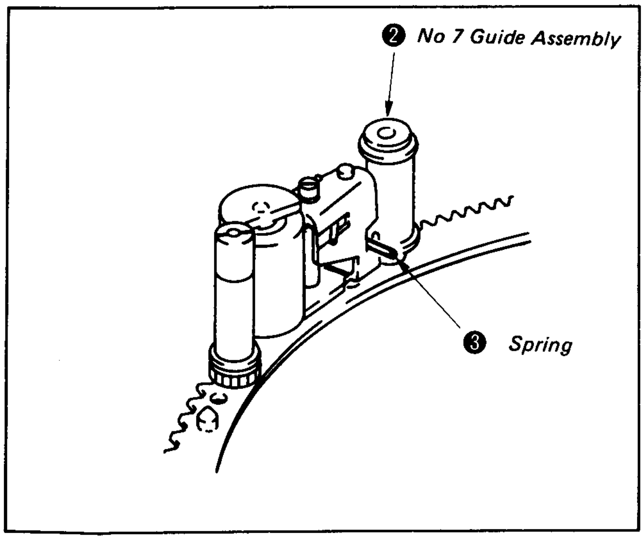

❷ No 7 Guide Assembly
❸ Spring

Fig. 8-16.

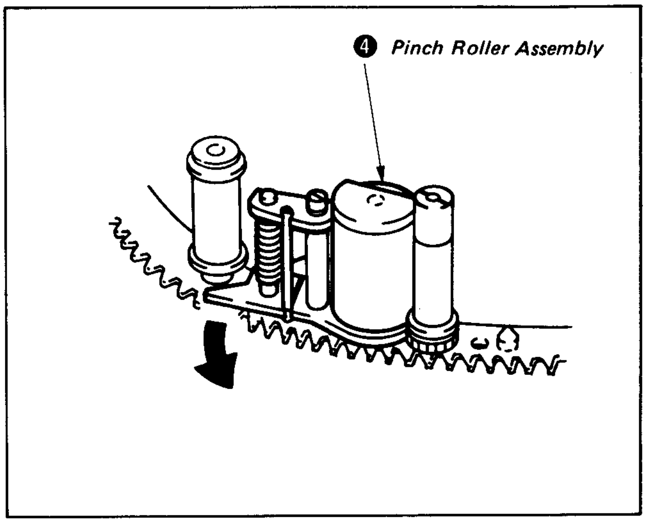

❹ Pinch Roller Assembly

Fig. 8-17.

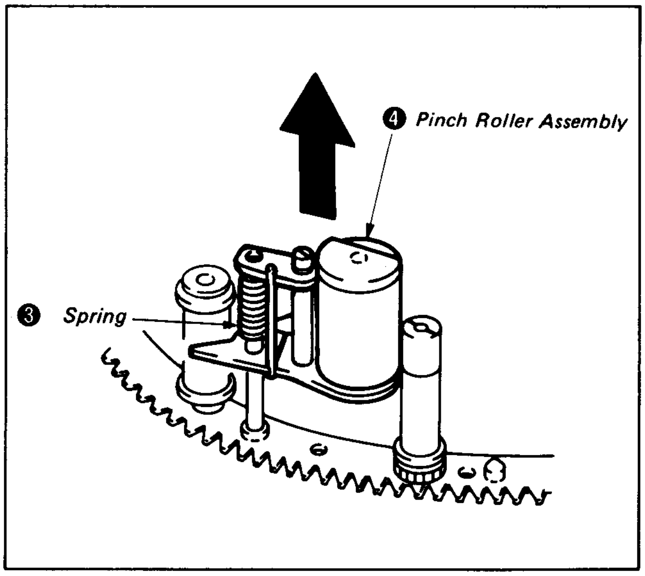

❹ Pinch Roller Assembly
❸ Spring

Fig. 8-18.

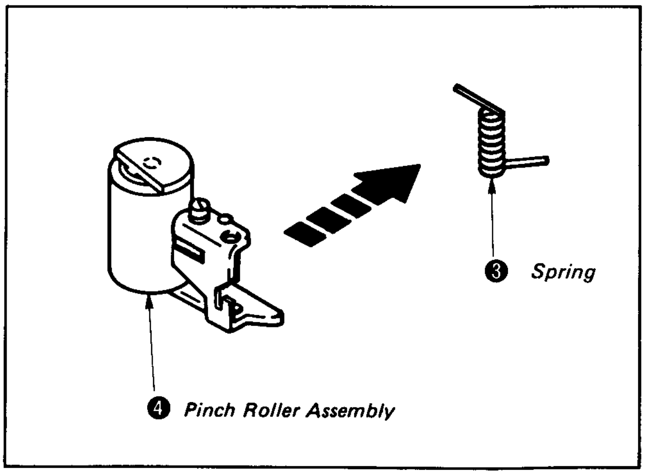

❸ Spring
❹ Pinch Roller Assembly

Fig. 8-19.

2. Remounting

1) Rehook the spring ❸. (See Fig. 8-20.)
2) Reinsert a thin object like a clip ❺ into the pinch roller assembly hole ❻. (See Fig. 8-21 and 22.)
3) Recontact the loading ring assembly spindle ❼ with the tip of the clip ❺ and fit the pinch roller assembly ❹. (See Fig. 8-23 and 24.)
4) Rehook the spring on the No. 7 guide assembly ❷. Confirm that the spring is hooked to part 🅐 at this time. (See Fig. 8-25.)
5) Remount the stop washer ❶. (See Fig. 8-26.)
6) Remount the loading ring assembly as instructed in 8-3-7.

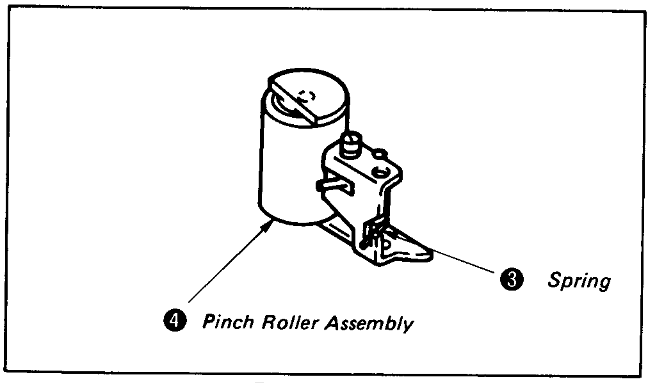

❸ Spring
❹ Pinch Roller Assembly

Fig. 8-20.

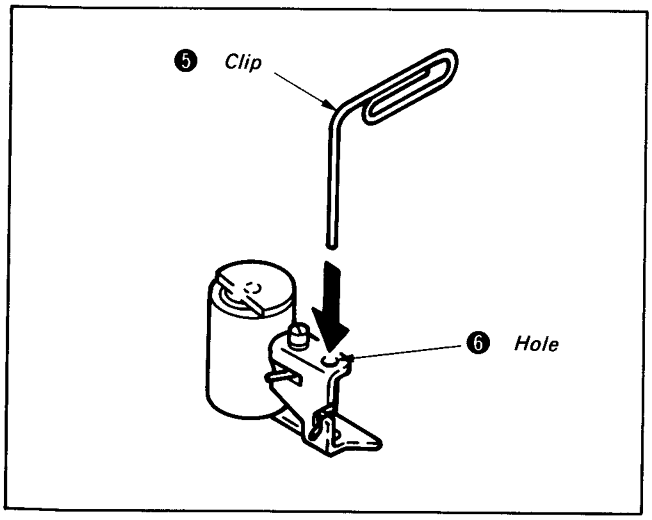

❺ Clip
❻ Hole

Fig. 8-21.

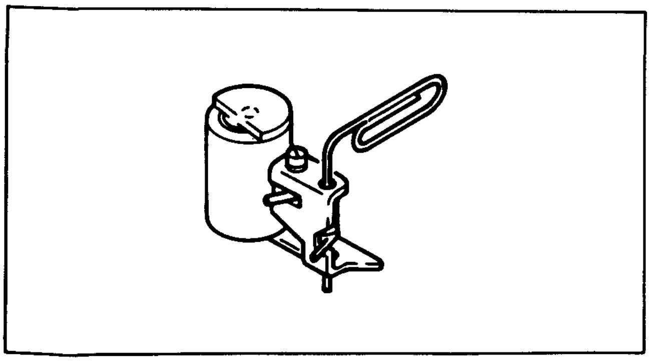


Fig. 8-22.

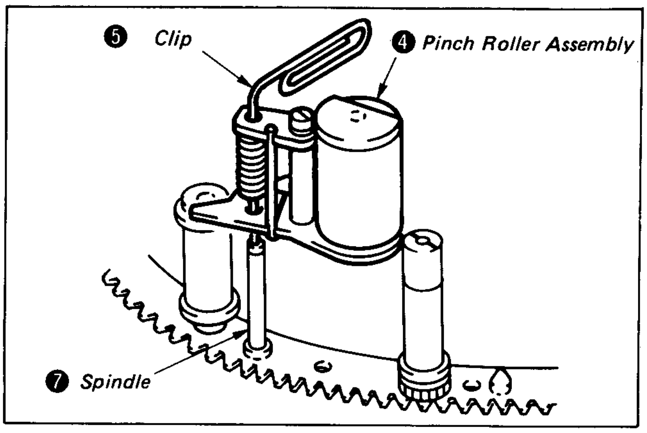

❺ Clip
❹ Pinch Roller Assembly
❼ Spindle

Fig. 8-23.

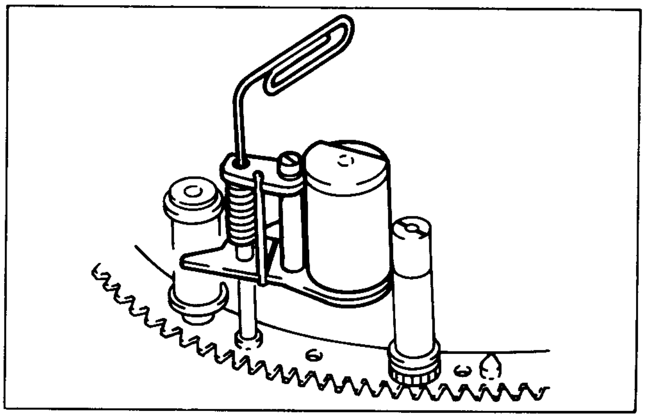


Fig. 8-24.

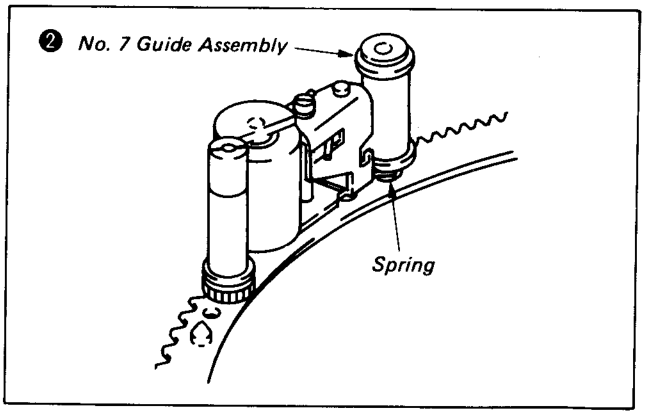

❷ No. 7 Guide Assembly
Spring

Fig. 8-25.

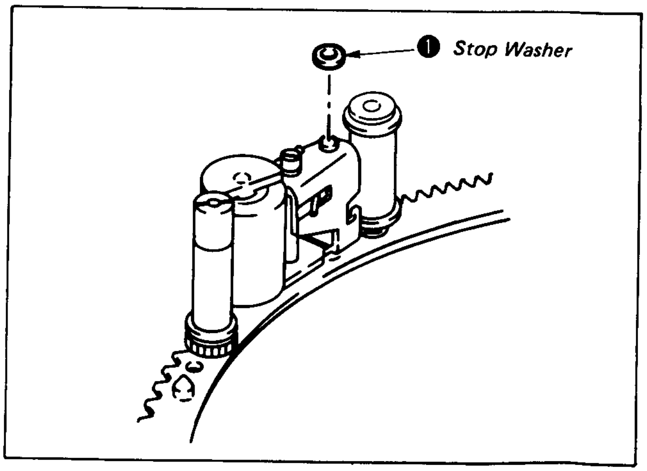

❶ Stop Washer

Fig. 8-26.

8-3-9. Slant Guide Chassis Assembly

1. Removal

1) Set up the EJECT mode and raise the cassette compartment asembly.
2) Remove the loading ring assembly as instructed in 8-3-7.
3) Remove the screw ❶ and E ring ❷ .
4) Remove the slant guide chassis assembly ❸ . (See Fig. 8-27.)

2. Remounting

1) Operate the mode selector and align the righthand edge of the L slider and that of the lock slider. (See Fig. 8-28.)
2) Set the guide base assembly of the slant guide chassis assembly in an unthreading condition (with the guide base assembly moved to the Camera section side) and remount it. (See Fig. 8-29.)
   Check the meshing position of the slant guide drive gear and the L slider assembly gear at this time.
3) Refit the E ring ❷ and tighten the screw ❶ . (See Fig. 8-27.)
4) Set to Condition 1) of 1. Remounting in 8-3-7.
5) Remount the loading ring assembly as instructed in 8-3-7.
6) Lower the cassette compartment assembly.

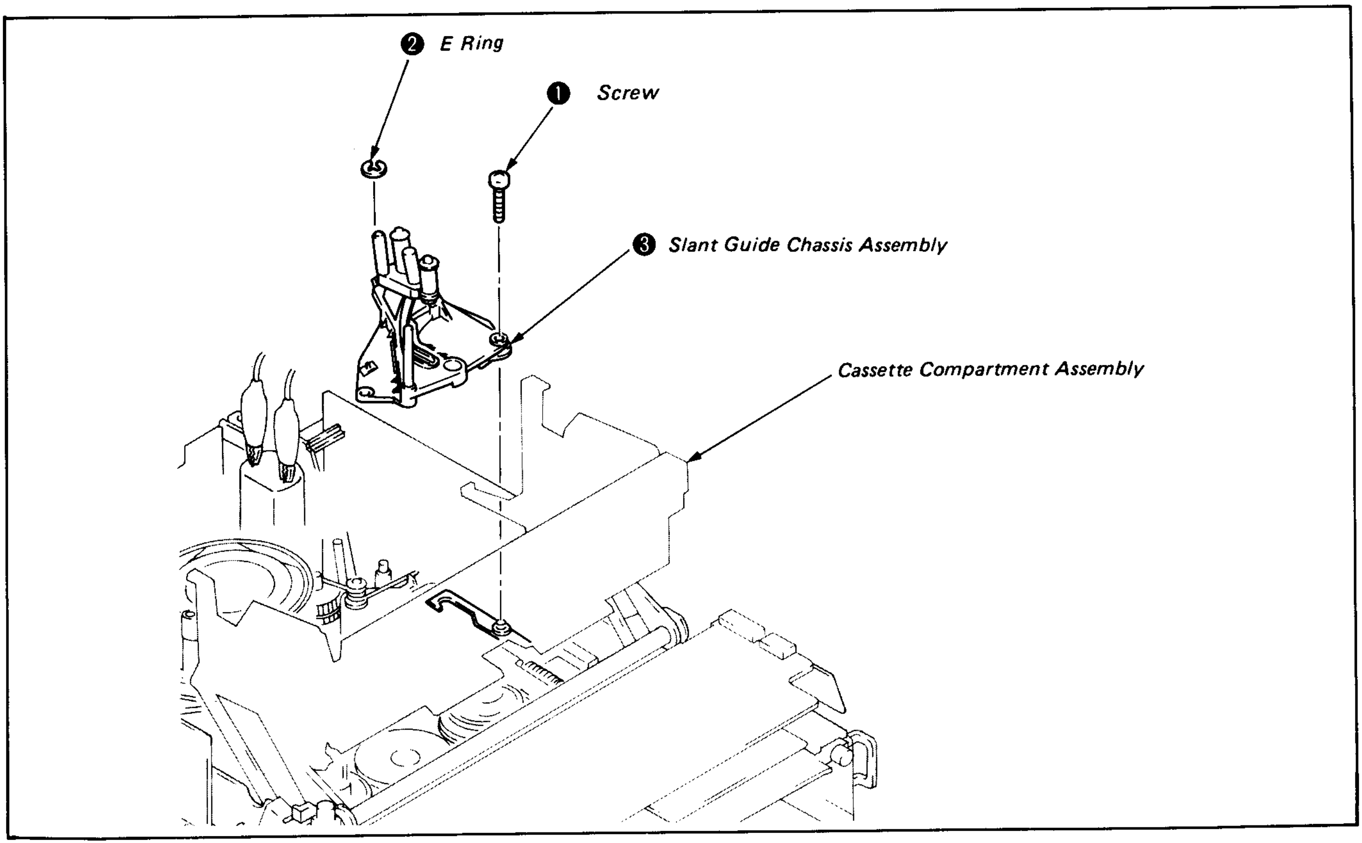

❷ E Ring
❶ Screw
❸ Slant Guide Chassis Assembly
Cassette Compartment Assembly

Fig. 8-27.

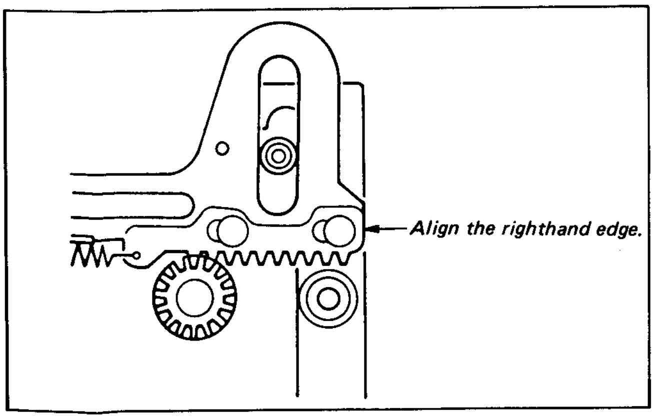

Align the righthand edge.

Fig. 8-28.

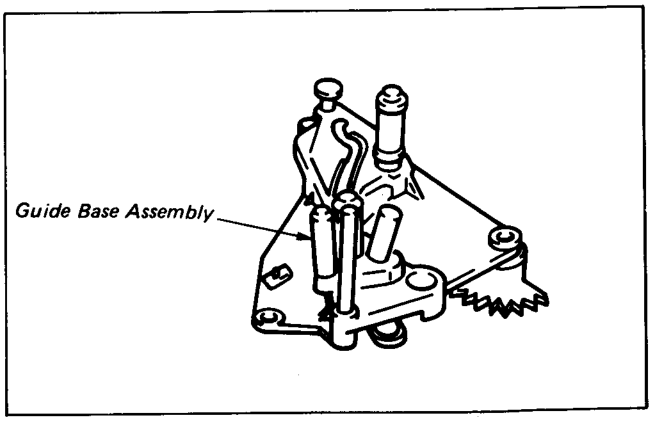

Guide Base Assembly

Fig. 8-29.

8-3-10. No.2 Guide Assembly

1. Removal

1) Release and remove claw of tape stopper ❶.
2) Rotate the rotary upper drum counterclockwise so that the head does not contact.
3) Remove the drum guard screw ❷ .
4) Remove the screw ❸ .
5) Remove the guide nut ❹ of the No. 3 guide, as well as the guide flange ❺ , guide ❻ and compression spring ❼ .
6) Remove the No. 2 guide assembly ❽. (See Fig. 8-30.)

2. Remounting

1) Confirm that it is in the LOADING TOP mode.
2) Mesh the toothless part Ⓐ of the toothed wheel under the No. 2 guide assembly (entrance guide (P) assembly) and that Ⓑ of the L slider.
3) Remount the compression spring ❼ , guide ❻ , and guide flange ❺ in this order and tighten the guide nut ❹ temporarily.
4) Tighten the screw ❸ .
5) Tighten the drum guard screw ❷ .
6) Refit the tape stopper ❶. (See Fig. 8-30.)
7) Perform FWD back tension adjustment of 8-3-21.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

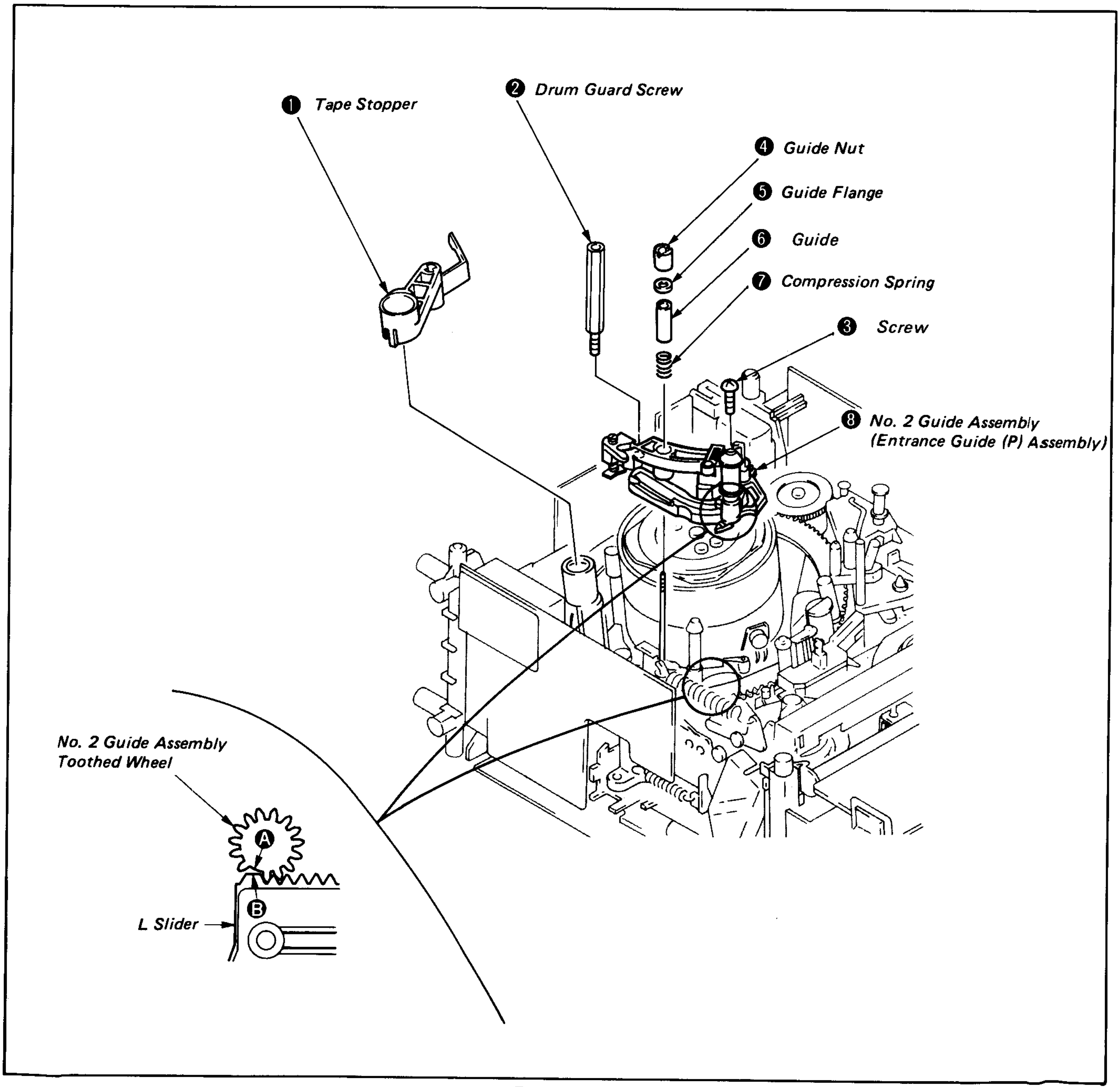

❶ Tape Stopper
❷ Drum Guard Screw
❹ Guide Nut
❺ Guide Flange
❻ Guide
❼ Compression Spring
❸ Screw
❽ No. 2 Guide Assembly (Entrance Guide (P) Assembly)
No. 2 Guide Assembly Toothed Wheel
Ⓐ
Ⓑ
L Slider

Fig. 8-30.

8-3-11. L Slider Assembly

1. Removal

1) Remove the slant guide chassis assembly as instructed in 8-3-9.
2) Remove the No. 2 guide assembly (entrance guide (P) assembly) as instructed in 8-3-10.
3) Set up the DRUM START mode.
4) Remove the slant guide drive gear ❶ .
5) Remove the pin of the tension regulator load arm assembly ❷ from the cam groove of the tension regulator arm assembly. (Refer to 8-3-4 Tension regulator arm assembly.)
6) Remove the two stopper washers ❸ .
7) Remove the L slider assembly ❺ push the RL arm assembly lug ❹ toward the arrow .
8) Remove the stopper washer ❻ and tension regulator load arm assembly ❷ . (See Fig. 8-31.)

2. Remounting

1) Grease the parts. (See Fig. 8-32.)
2) Remount the tension regulator load arm assembly ❷ and stop washer ❻ . (See Fig. 8-31.)
3) Remount the L slider assembly ❺ pushing the RL arm assembly lug ❹ toward the arrow .
4) Refit the two stop washers ❸ .
5) Reinsert the pin of the tension regulator load arm assembly ❷ into the groove of the M slider. (Refer to 8-3-15 M Slider.)
6) Reinsert the pin of the tension regulator load arm assembly ❷ in the cam groove of the tension regulator arm assembly referring to 2) of 2. Remounting in 8-3-4. (Refer to 8-3-4 Tension regulator arm assembly.)
7) Operate the mode selector and align the righthand edges of the L slider and lock slider. (Refer to 1) of 2. Remounting in 8-3-9.)
8) Mesh the notch of the alant guido drive gear ❶ with the tooth at the left edge of the L. slider assembly shiding one tooth while taking note to the upper and lower parts of the slant guide drive gear ❶ . (See Fig. 8-33.)
9) Remount the No. 2 guide assembly in accordance with 8-3-10.
10) Remount the slant guide chassis assembly as instructed in 8-3-9.

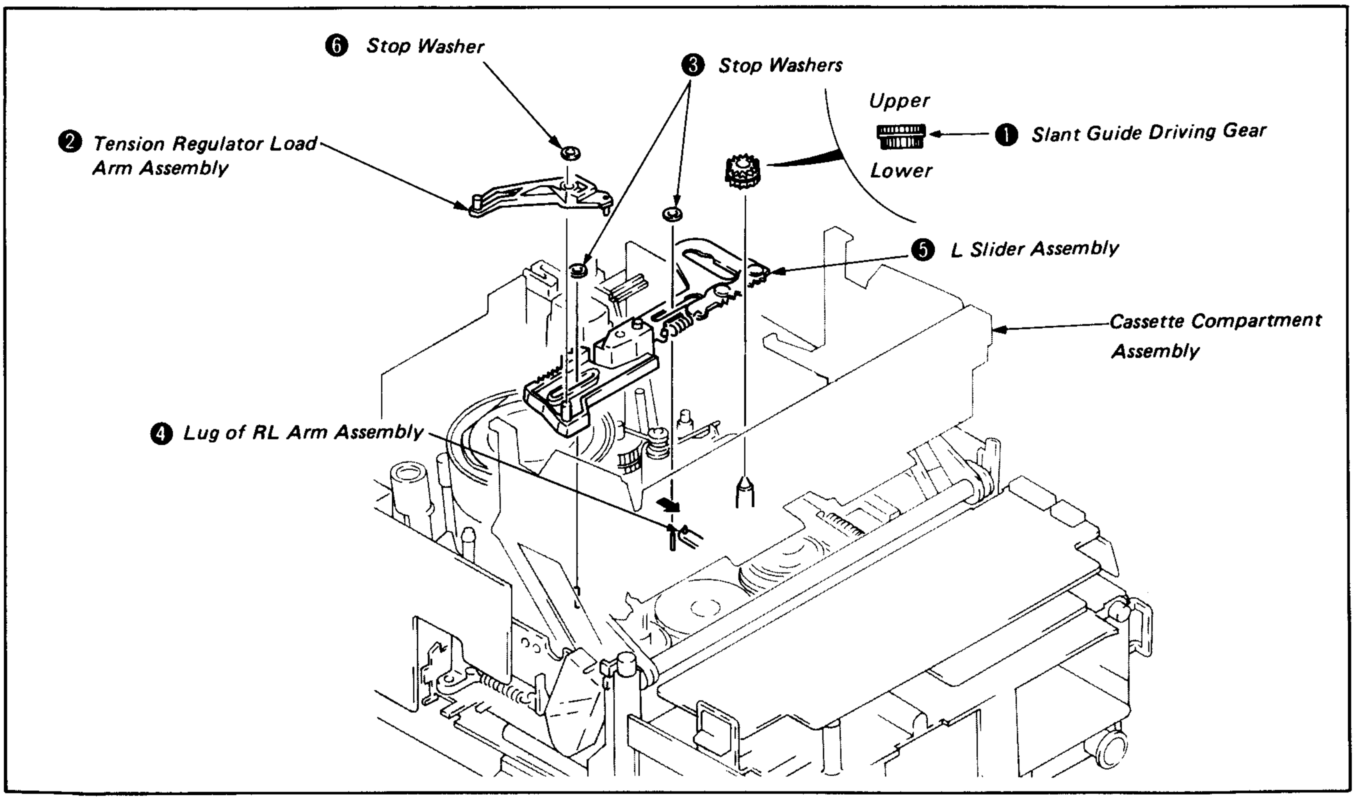

❻ Stop Washer
❸ Stop Washers
Upper
❶ Slant Guide Driving Gear
Lower
❷ Tension Regulator Load Arm Assembly
❺ L Slider Assembly
Cassette Compartment Assembly
❹ Lug of RL Arm Assembly

Fig. 8-31.

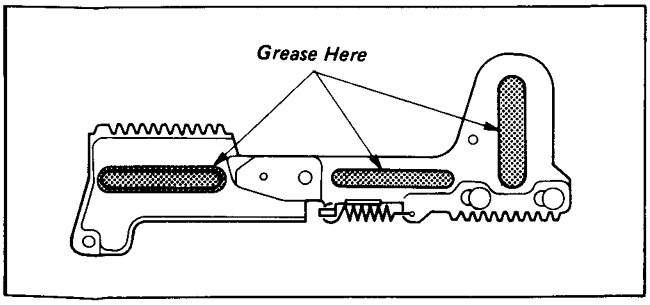

Grease Here

Fig. 8-32.

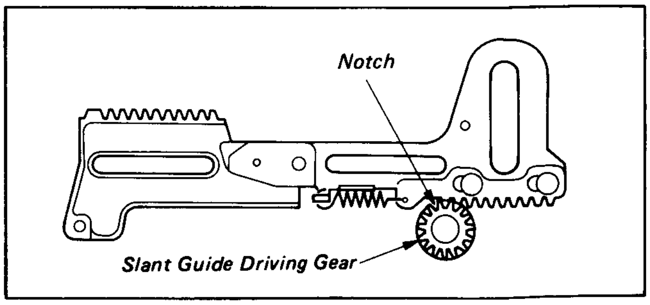

Notch
Slant Guide Driving Gear

Fig. 8-33.

8-3-12. L-SW Assembly

1. Removal

1) Remove the L slider assembly as instructed in 8-3-11.
2) Remove the lock slider retainer ❶.
3) Remove the screw ❷ and lock slider ❸.
4) Remove the stop washer ❹ and spring ❺.
5) Remove the drive changer assembly ❻.
6) Remove the connector ❼.
7) Remove two screws ❽ and L-SW assembly ❾. (See Fig. 8-34.)

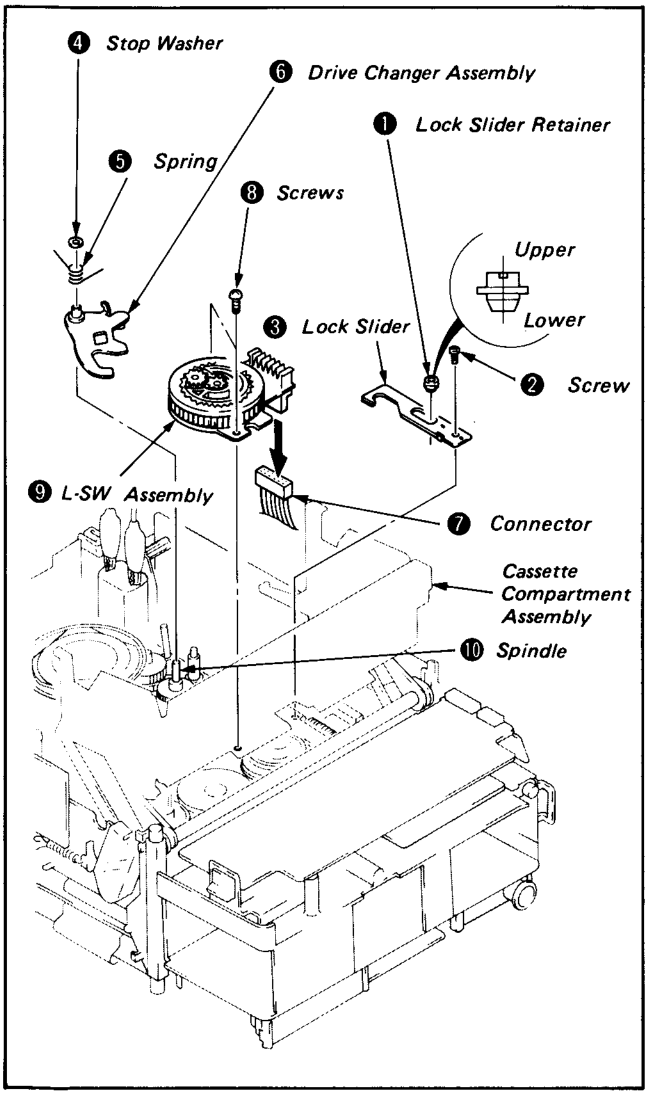

❹ Stop Washer
❻ Drive Changer Assembly
❶ Lock Slider Retainer
❺ Spring
❽ Screws
Upper
Lower
❸ Lock Slider
❷ Screw
❾ L-SW Assembly
❼ Connector
Cassette Compartment Assembly
❿ Spindle

Fig. 8-34.

2. Remounting

1) Oil half a drop of oil on the spindle (planetary roller spindle) of the L-SW assembly ❾.
2) Remount the L-SW assembly ❾ and tighten two screws ❽.
3) Reconnect the connector ❼.
4) Operate the mode selector and check that the L-SW assembly ❾ rotates.
5) Oil half a drop of oil on the spindle ❿.
6) Grease the drive changer assembly ❻. (See Fig. 8-35.)
7) Remount the drive changer assembly ❻. (See Fig. 8-34.)
8) Rehook the spring ❺ and refit the stop washer ❹.
9) Operate the mode selector and check that the L-SW assembly ❾ rotates.
10) Operate the mode selector, and set in the position shown in Fig. 8-36.
11) Remount lock slider ❸ and secure with screw ❷.
12) Remount by taking note of lock slider retainer ❶ upper and lower sections. (See Fig. 8-34.)
13) Remount L slider assembly in accordance with 8-3-11.

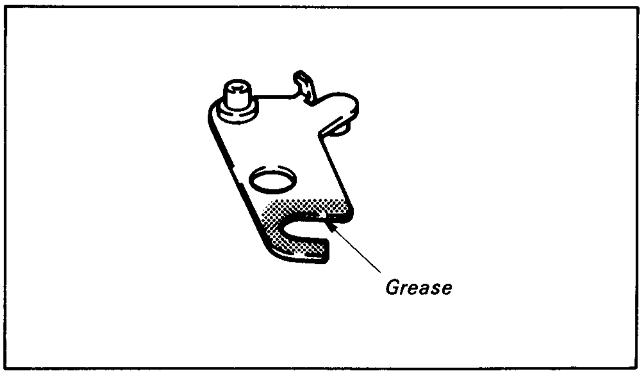


Fig. 8-35.

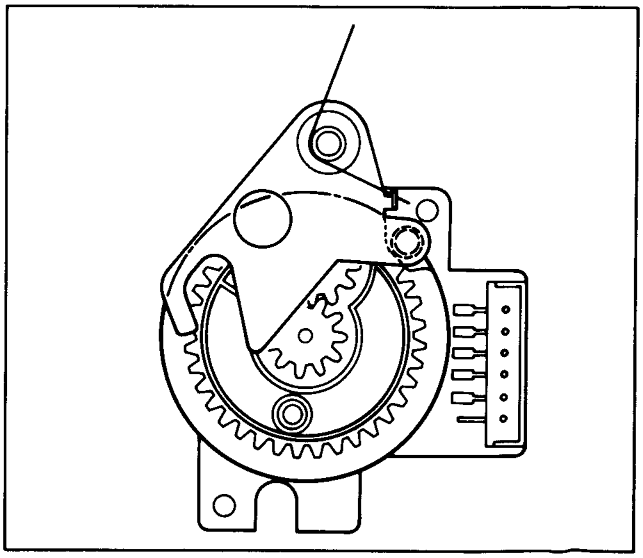


Fig. 8-38.

8-3-13. Plunger Solenoid

1. Removal

1) Open the battery holder assembly in accordance with 2-18.
2) Remove cassette compartment in accordance with 2-11.
3) Remove T reel table assembly in accordance with 8-3-2.
4) Remove the spring ❶.
5) Remove two stop washers ❷.
6) Remove the screw ❸ and lock slider ❹.
7) Remove soldering from ❸ sections of the terminal of the plunger solenoid ❻.
8) Remove two screws ❺ and the plunger solenoid ❻. (See Fig. 8-37.)

2. Remounting

1) Reinsert the pin ❼ of the plunger solenoid in the P arm hole ❽ and tighten two screws ❺ . Be careful not to inflict scars on the T reel table by a screwdriver or touch it.)
2) Solder 3 sections of the terminal of the plunger solenoid ❻.
3) Remount the lock slider ❹ and tighten the screw ❸.
4) Refit the two stop washers ❷.
5) Refit the spring ❶. (See Fig. 8-37.)
6) Remount T reel table assembly in accordance with 8-3-2.
7) Remount the cassette compartment assembly in accordance with 8-1-1.
8) Remount the battery holder assembly in reverse procedure of 2-18.

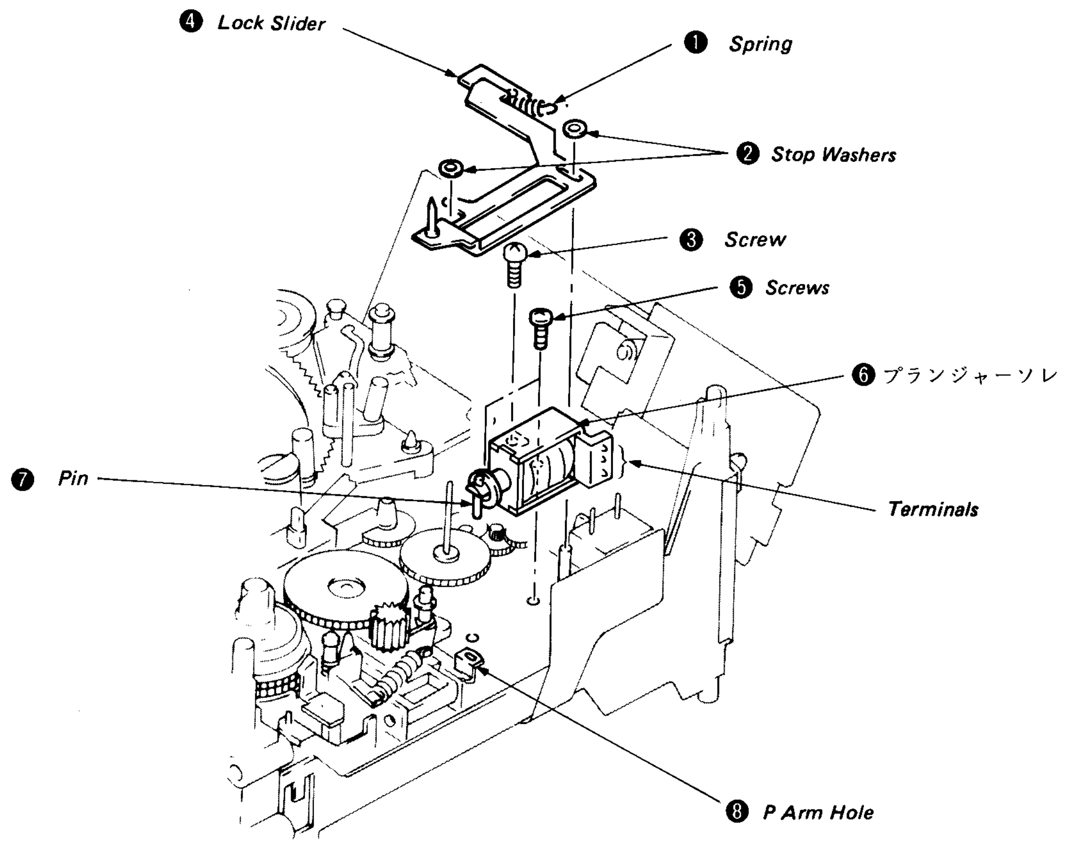


Fig. 8-37.

8-3-14. M-SW Assembly

1. Removal

1) Open the battery holder assembly in accordance with 2-18.
2) Remove the T reel table assembly as instructed in 8-3-2.
3) Remove the stop washer ① and drive gear (B) assembly ②.
4) Remove the complete LD-1 board ③. (See Fig. 8-38.)
5) Remove the lock slider as instructed in 3), 4), and 5) of 1. Removal in 8-3-13.
6) Remove the spring ④ and B release arm assembly ⑤.
7) Check that the EJECT mode is set up.
8) Remove the stop wahser ⑥ and mode output gear ⑦.
9) Remove soldering from three sections of terminal of RECOG SW assembly ⑧.
10) Remove the screw ⑨ and RECOG SW assembly (S902) ⑧.
11) Disconnect the connector ⑩.
12) Remove three screws ⑪, control motor cover ⑫.
13) Push TS release arm ⑬ in the direction of arrow Ⓐ while raising up the M-SW assembly ⑭ and next push the T main brake assembly ⑮ in the direction of arrow Ⓑ and remove the M-SW assembly ⑭.
14) Remove solder Ⓒ and the control motor (M903) ⑯. (See Fig. 8-39.)

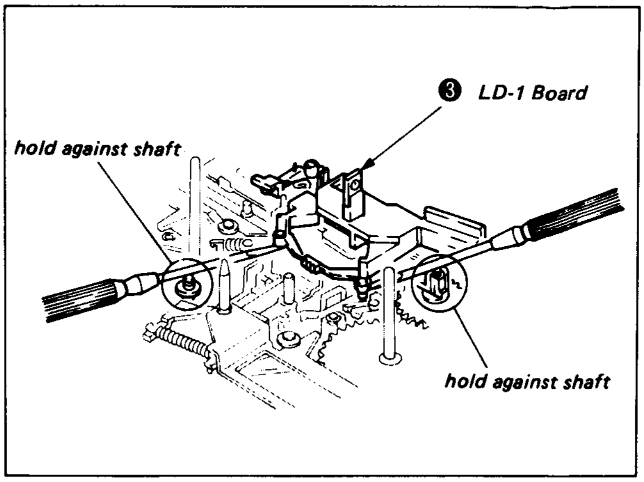

③ LD-1 Board
hold against shaft
hold against shaft

Fig. 8-38.

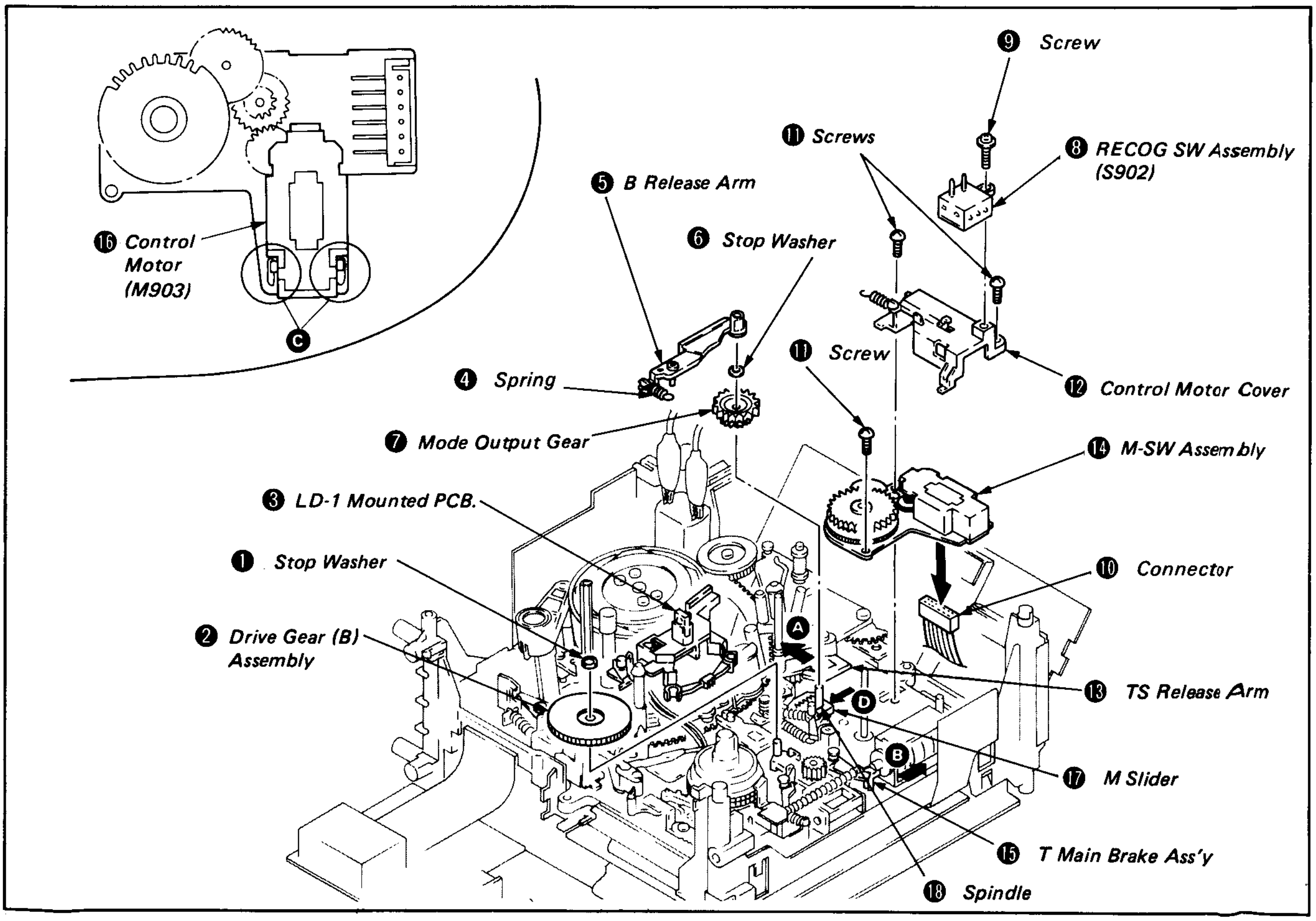

⑨ Screw
⑪ Screws
⑧ RECOG SW Assembly (S902)
⑤ B Release Arm
⑥ Stop Washer
⑯ Control Motor (M903)
Ⓒ
⑪ Screw
④ Spring
⑫ Control Motor Cover
⑦ Mode Output Gear
⑭ M-SW Assembly
③ LD-1 Mounted PCB.
① Stop Washer
⑩ Connector
② Drive Gear (B) Assembly
Ⓐ
Ⓓ
⑬ TS Release Arm
Ⓑ
⑰ M Slider
⑮ T Main Brake Ass'y
⑱ Spindle

Fig. 8-39.

2. Remounting

1) Resolder the control motor (M903) ⑯ .
2) Remount M-SW assembly ⑭ in the reverse procedure of 13) Removal.
3) Remount Control motor cover ⑫ and secure with three screws ⑪ .
4) Connect connector ⑩ .
5) Solder three sections of terminal of RECOG SW assembly ⑧.
6) Remount RECOG SW assembly ⑧ and tighten the screw ⑨.
7) Check that the EJECT mode is set up.
8) Check that the M slider ⑰ is moved toward the arrow Ⓓ fully.
9) Oil half a drop of oil on the spindle ⑱ . (See Fig. 8-39.)
10) Remount the mode output gear ⑦ so that the alignment holes are linear. (See Fig. 8-40.)
11) Refit the stop washer ⑥.
12) Set to the LOADING/UNLOADING mode.
13) Remount the B release arm assembly ⑤ and rehook the spring ④.
14) Remount the lock slider as instructed in 3), 4) and 5) of 2. Remounting in 8-3-13.
15) Remount the complete LD-1 board ③ .
16) Remount the drive gear (B) assembly ② and refit the stop washer ①. (See Fig. 8-39.)
17) Remount the T reel table assembly as instructed in 8-3-2.
18) Remount the battery holder assembly in the reverse procedure of 2-18.

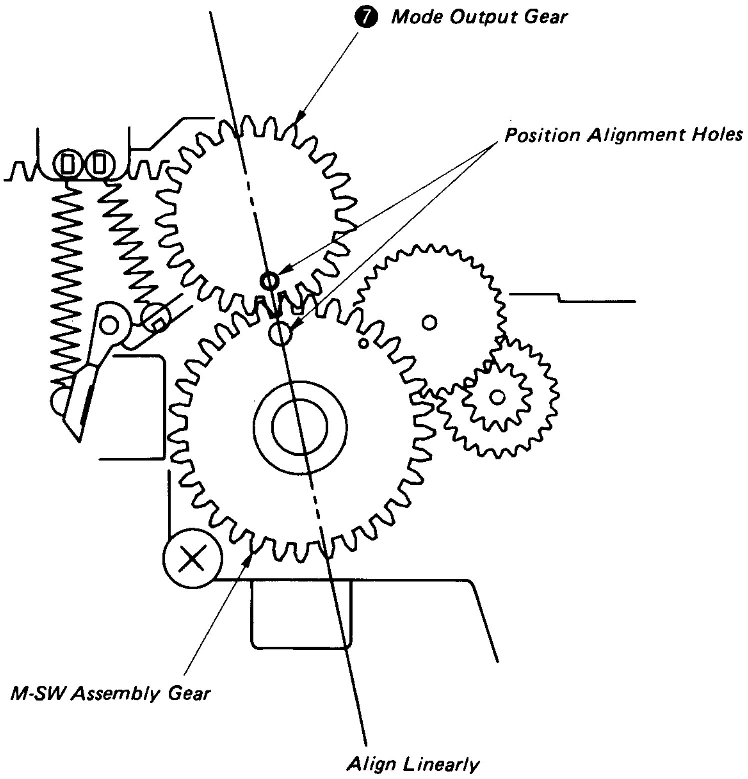


Fig. 8-40.

8-3-15. M Slider

1. Removal

1) Open the SS-64 Board as instructed in 2-13. and remove the timing belt ❶ .
2) Remove S reel table assembly in accordance with 8-3-1.
3) Remove T reel table assembly in accordance with 8-3-2.
4) Remove the pinch press arm assembly as instructed in 8-3-3.
5) Remove the tension regulator arm assembly as instructed in 8-3-4.
6) Remove the tension regulator band assembly as insturcted in 8-3-5.
7) Remove the loading ring assembly as instructed in 8-3-7.
8) Perform Steps 2) to 6) of 8-3-14.
9) Remove the tension regulator load arm assembly as instructed in 8) of 1. Removal in 8-3-11.
10) Remove the spring ❷ .
11) Remove two stop washers ❸ , S main brake assembly ❹ and T main brake assembly ❺ .
12) Set up the LOADING TOP and LOADING/UNLOADING modes.
13) Remove two screws ❻ and the driving arm complete assembly ❼ .
14) Perform Step 8) of 1. Removal in 8-3-14.
15) Remove two springs ❽ .
16) Remove the REW brake assembly ❾ .
17) Remove the RVS arm ❿ .
18) Remove the stop washer ⓫ and B release slider ⓬ .
19) Remove the stop washer ⓭ , spring ⓮ , and RL arm ⓯ .
20) Move the M slider ⓰ toward the right (leave approximately 5mm on the left).
21) Remove the E ring ⓱ and pinch press lever assembly ⓲ .
22) Remove the spring ⓳ and hard brake (S) ⓴ .
23) Remove the stop washer ㉑ , push the mode arm ㉒ toward the arrow then remove the M slider ⓰ by lifting the lefthand side of the M slider ⓰ . (See Fig. 8-41.)

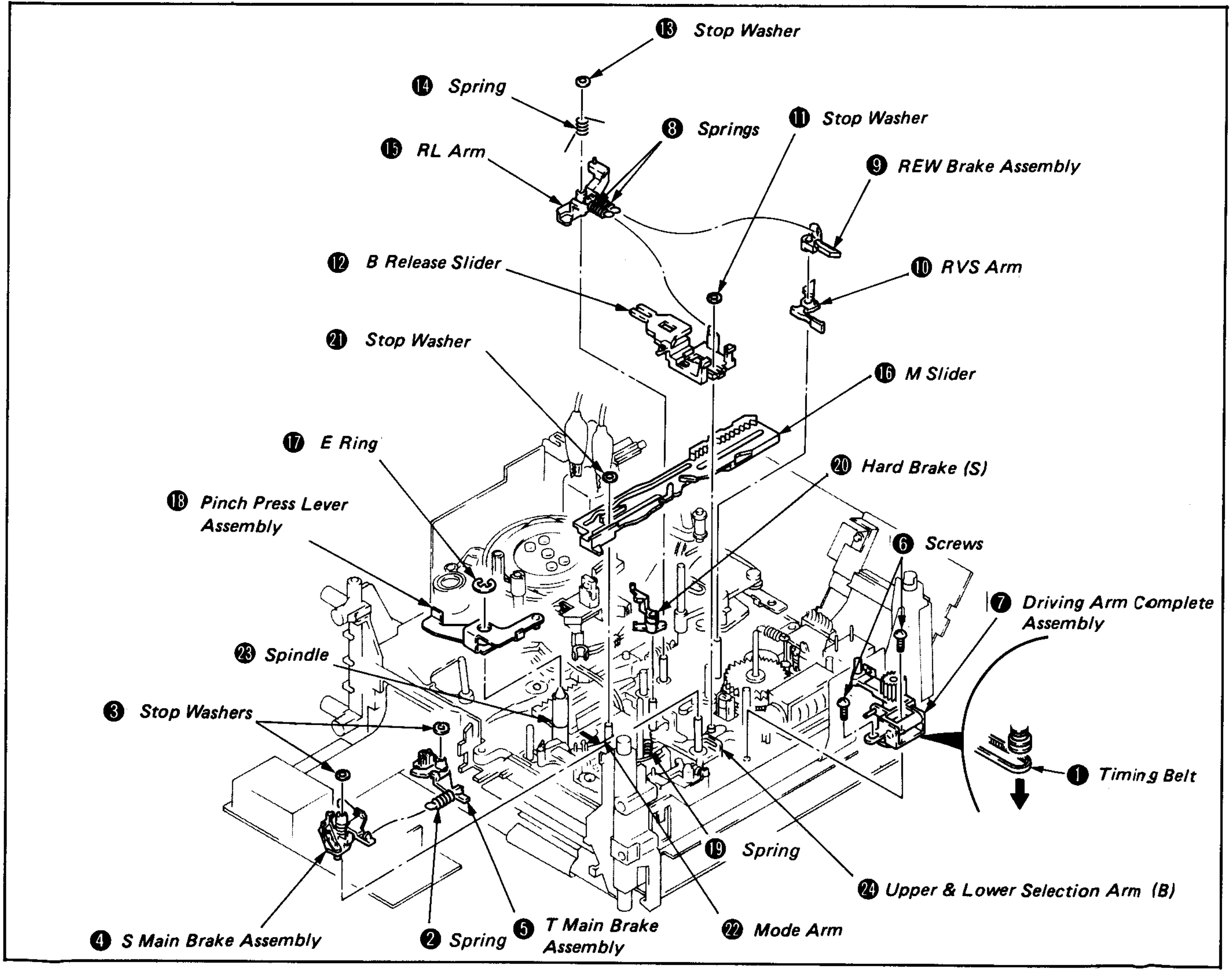

⓭ Stop Washer
⓮ Spring
⓯ RL Arm
❽ Springs
⓫ Stop Washer
❾ REW Brake Assembly
⓬ B Release Slider
❿ RVS Arm
㉑ Stop Washer
⓰ M Slider
⓱ E Ring
⓴ Hard Brake (S)
⓲ Pinch Press Lever Assembly
❻ Screws
❼ Driving Arm Complete Assembly
㉓ Spindle
❸ Stop Washers
❶ Timing Belt
⓳ Spring
㉔ Upper & Lower Selection Arm (B)
❹ S Main Brake Assembly
❷ Spring
❺ T Main Brake Assembly
㉒ Mode Arm

Fig. 8-41.

2. Remounting

1) Grease the slider. (See Fig. 8-42.)
2) Push the mode arm ㉒ in the arrow direction, remount the M slider ⓰ referring to Fig. 8-43 and paying attention to the vertical position relationship with other portions of the slider, and refit the stop washer ㉑ . (See Fig. 8-41.)
3) Remount the hard brake (S) ⓴ and rehook the spring ⓳ .
4) Grease as shown in Fig. 8-44.
5) Oil half a drop of oil on the parts below the spindle ㉓ groove, mount the pinch press lever assembly ⓲ , and refit the E ring ⓱ .
6) Remount the RL arm ⓯ , rehook the spring ⓮ , and refit the stop washer ⓭ .
7) Remount B release slider ⓬ and place stop washer ⓫ .
8) Slide B release slider ⓬ on the side of drum and remount reverse arm ❿ .
9) Remount the REW brake assembly ❾ .
10) Rehook two springs ❽ .

Note: Rehook two springs as noted below so as not to misplace them.
The spring for the B release slider
outside diam: 2mm, wire diam: 0.18mm
The spring for the REW ass'y
outside diam: 1.6mm, wire diam: 0.12mm

11) Move the M slider ⓰ fully to the left.
12) Set up the EJECT mode.
13) Perform Steps 9), 10) and 11) of 2. Remounting in 8-3-14.
14) Set up the LOADING/UNLOADING mode.
15) Insert the horizontal spindle of the driving arm complete assembly ❼ in the groove of the upper & lower selection arm (B) ㉔ , insert the lug of the RVS arm ⓬ in the dented part of the driving arm complete assembly ❼ , and tighten two screws ❻ .
16) Remount the T main brake assembly ❺ and S main brake assembly ❹ , refit two each stop washers ❸ , and refit the spring ❷. (See Fig. 8-41.)
17) Remount the tension regulator load arm assembly as instructed in 2) of 2. Remounting in 8-3-11.
18) Perform Steps 13) to 17) of 2. Remounting in 8-3-14.
19) Remount the loading ring assembly as instructed in 8-3-7.
12) Remount the tension regulator band assembly as instructed in 8-3-5.
21) Remount the tension regulator arm assembly as instructed in 8-3-4.
22) Remount the pinch press arm assembly as instructed in 8-3-3.
23) Remount T reel table assembly in accordance with 8-3-2.
24) Remount S reel table assembly in accordance with 8-3-1.
25) Remount timing belt ❶, and remount SS-64 board by referring to 2-13.

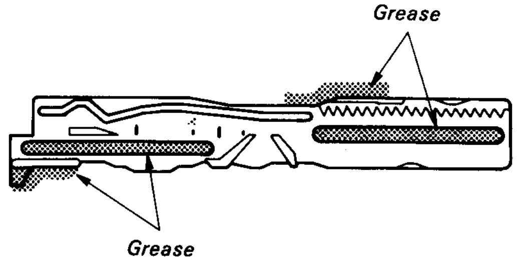


Fig. 8-42.

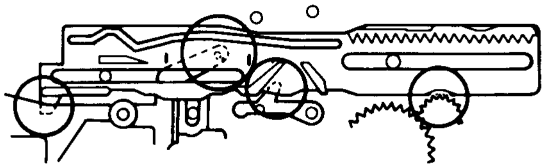


Fig. 8-43.

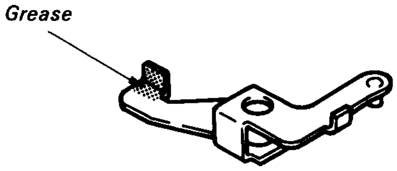


Fig. 8-44.

8-3-16. Capstan Motor

1. Removal

1) Remove the tape stopper as instructed in 1) of 1. Removal in 8-3-10.
2) Remove the loading ring assembly as instructed in 8-3-7.
3) Open the SS-64 Board as instructed in 2-13. and turn the set upside down.
4) Remove wiring from wire clamp ❷.
5) Remove screw ❶ and remove wire clamp ❷.

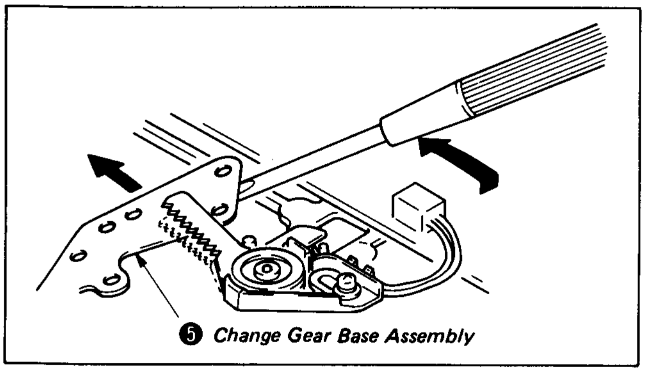

❺ Change Gear Base Assembly

Fig. 8-45.

6) Remove the timing belt ❸.
7) Remove the screw ❹ and the change gear base assembly ❺ using a screwdriver. (See Fig. 8-45 and 46.)
8) Remove flexible connector ❻.
9) Remove two screws ❼ and remove capstan motor assembly ❽ in the direction of arrow. (See Fig. 8-46.)

2. Remounting

1) Remount the capstan motor (M902) ❽ and tighten two screws ❼.
2) Connect flexible connector ❻. (See Fig. 8-46.)
3) Remount the change gear base assembly ❺ and tighten the screw ❹.
4) Re-place the timing belt ❸.
5) Remount the wire clamp ❷ and tighten the screw ❶. (See Fig. 8-46.)
6) Remount wiring into wire clamp ❷.
7) Remount SS-64 board with set in upward position in accordance with 2-13.
8) Remount the loading ring assembly as instructed in 8-3-7.
9) Remount the tape stopper as instructed in 6) of 2. Remounting in 8-3-10.

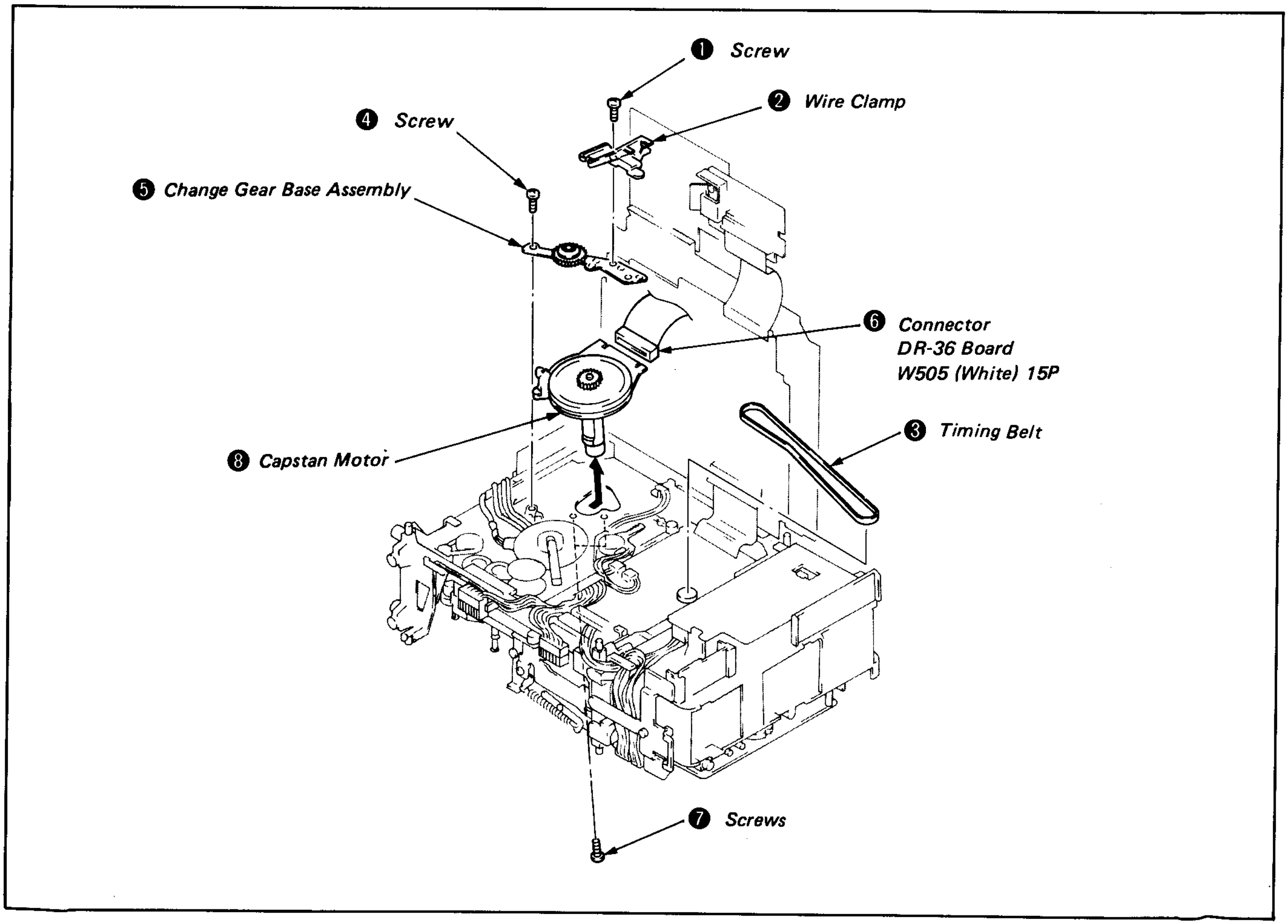

❶ Screw
❷ Wire Clamp
❹ Screw
❺ Change Gear Base Assembly
❻ Connector
DR-36 Board
W505 (White) 15P
❸ Timing Belt
❽ Capstan Motor
❼ Screws

Fig. 8-46.

8-3-17. Rotary Upper Drum Replacement

1. Removal

Note: If it is possible to be video-recorded, perform video recording before hand and then remove it.

1) Remove two hexagon socket screws (2 x 2.7) ❶ and dismount the dynamic damper ❷. (See Fig. 8-47.)
2) Suction solder at all of the soldered eight positions Ⓐ . Check that the printed wiring board and pins jutting out from below freely moove using tweezers, or other tool. (See Fig. 8-47.)
3) Remove the two hexagon socket screws (2x5) ❸ . (See Fig. 8-47.)
4) Remount the dismounting Jig Ⓑ by the accessory screws ❹ utilizing the screw holes in which the dynamic damper was mounted.
   Drive the hexagon socket screw ❺ into the jig and pulled up the rotary upper drum ❻. (See Fig. 8-48.)

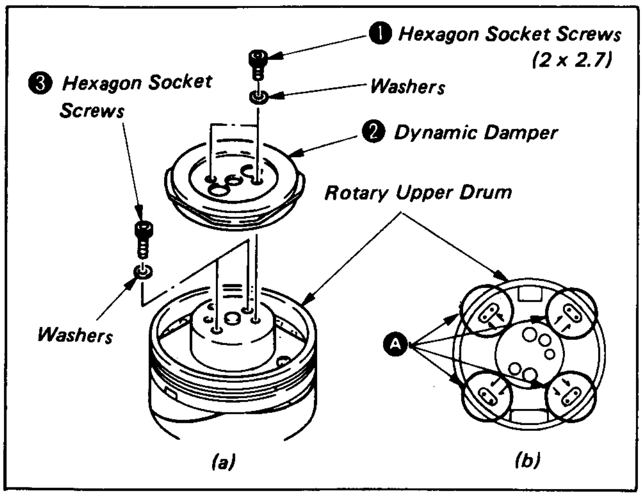

❶ Hexagon Socket Screws (2 x 2.7)
❸ Hexagon Socket Screws
Washers
❷ Dynamic Damper
Rotary Upper Drum
Washers
Ⓐ
(a)
(b)

Fig. 8-47.

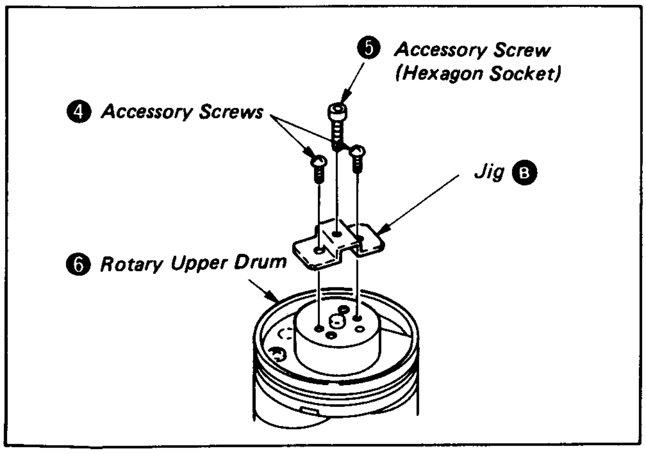

❺ Accessory Screw (Hexagon Socket)
❹ Accessory Screws
Jig Ⓑ
❻ Rotary Upper Drum

Fig. 8-48.

2. Remounting

1) Carefully clean the flange surfaces and planes of the rotary upper drum and visually check that no blemishes or flaws are left.
2) Insert Jig Ⓒ in the positioning hole Ⓓ so that the holes of the rotary upper drum ❻ and flange coincide. Lightly insert the rotary upper drum in the drum shaft while aligning their positions. (See Fig. 8-49.) (Check that pins are projecting above the holes on the printed circuit board of the rotary upper drum. When the pins are caught, correct using tweezers, etc.)
3) Remove Jig Ⓒ , lightly push the rotary upper drum by hands. If the rotary upper drum does not go in to the bottom, alternately tighten the two hexagon socket screws (2 x 5) ❸ by hand and temporarily fix them. (See Fig. 8-47 and 8-50.)
4) Reinsert the Jig Ⓒ in the positioning hole and check that the jig can be inserted smoothly. (When the jig cannot be inserted, loosen the two hexagon socket screws (2 x 5) ❸ and slide it inserting a clock screwdriver in the hole.)
5) Tighten the two hexagon socket screws (2 x 5) ❸ .

Note: Do not tighten too strongly.

6) Solder the eight positions Ⓐ . (See Fig. 8-47.)

Note: Be careful not to flow solder below the printed wiring board.

7) Tighten the two hexagon socket screws (2 x 2.7) ❶ reversing the screw removal procedure and remount the dynamic damper ❷. (See Fig. 8-47.)

Note: Do not tighten too strongly.
When remounting, do not mix the hexagon socket screws (2 x 2.7) ❶ and hexagon socket screws (2 x 5) ❸ .

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

Note: Replay the recorded tape after adjusting the tape path and before exchanging the rotary upper drum and check that the tape replays properly.

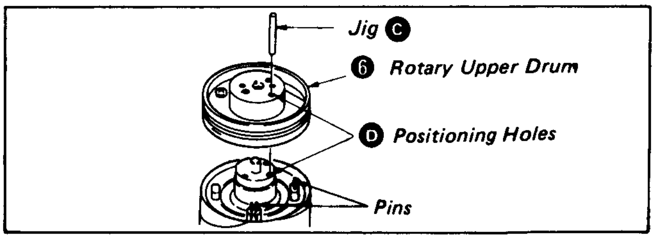

Jig Ⓒ
❻ Rotary Upper Drum
Ⓓ Positioning Holes
Pins

Fig. 8-49.

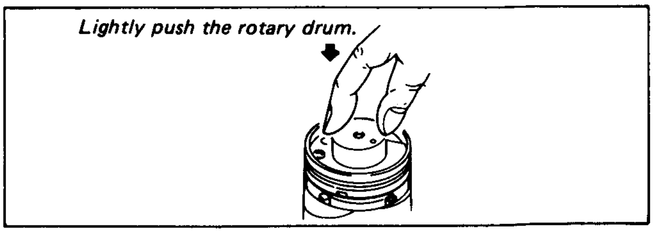

Lightly push the rotary drum.

Fig. 8-50.

8-3-18. Drum Assembly Replacement

1. Removal

1) Open the SS-64 Board as instructed in 2-13.
2) Remove the screw ❶.
3) Remove the screw ❷ and shaft ground terminal ❸. (See Fig. 8-51.)
4) Disconnect five connectors ❹.
5) Remove two screws ❺.
6) Remove the drum assembly ❻. (See Fig. 8-52.)

2. Remounting

1) Remount the drum assembly ❻ and tighten two screws ❺.
2) Connect five connectors ❹. (See Fig. 8-52.)
3) Remount the shaft ground terminal ❸ and tighten the screw ❷.
4) Remount the screw ❶. (See Fig. 8-51.)
5) Remount SS-64 board in the reverse procedure of 2-13.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

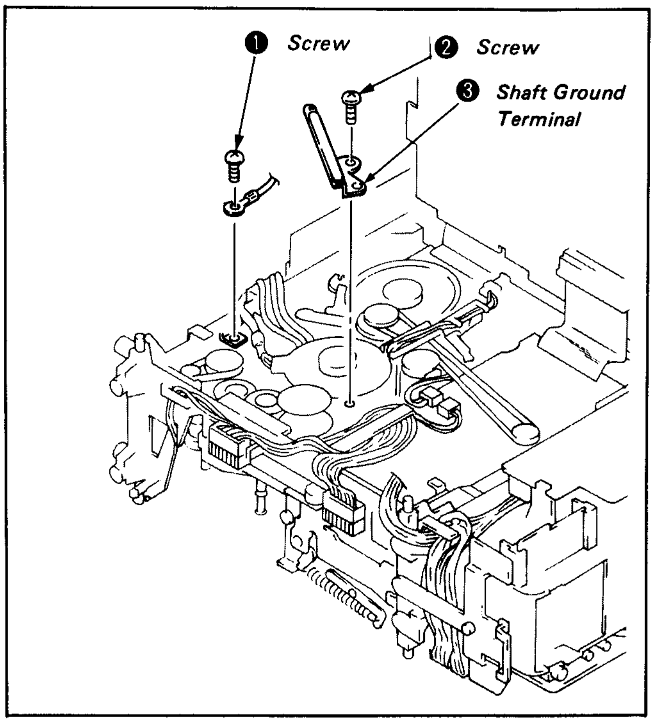

❶ Screw
❷ Screw
❸ Shaft Ground Terminal

Fig. 8-51.

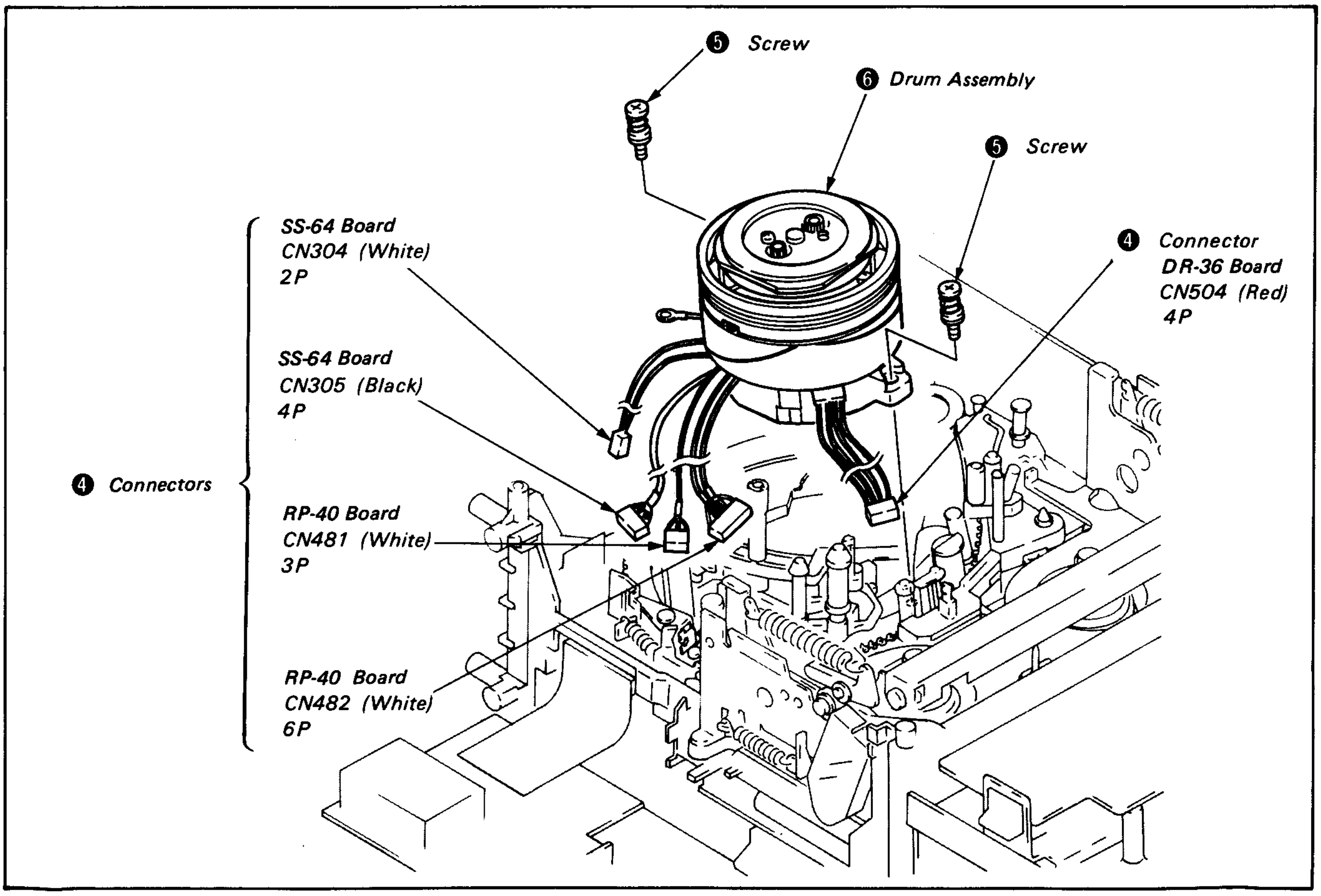

❺ Screw
❻ Drum Assembly
❺ Screw
❹ Connector
DR-36 Board
CN504 (Red)
4P
SS-64 Board
CN304 (White)
2P
SS-64 Board
CN305 (Black)
4P
❹ Connectors
RP-40 Board
CN481 (White)
3P
RP-40 Board
CN482 (White)
6P

Fig. 8-52.

8-3-19. Adjustment after Replacing No.3 and No.4 Guides

Run the tape on the upper flanges for both No. 3 and 4 guides after replacing them. (See Fig. 8-88.)

8-3-20. No.5 Guide Assembly

1. Removal

1) Remove the tape stopper as instructed in 1) of 1. removal in 8-3-10.
2) Remove three screws ❶ and No. 5 guide assembly.
3) Remove the guide nut ❷ , the spring ❸ and the shaft ❹. (See Fig. 8-53.)

2. Remounting

1) Reinsert the spring ❸ in the shaft ❹ , reengage the dent and bump in the lower parts, and tighten the guide nut ❷.
2) Remount the No. 5 guide assembly and tighten three screws ❶. (See Fig. 8-53.)
3) Remount the tape stopper as instructed in 6) of 2. Remounting in 8-3-10.

Note: Be sure to adjust the tape path as instructed in 8-4 after remounting.

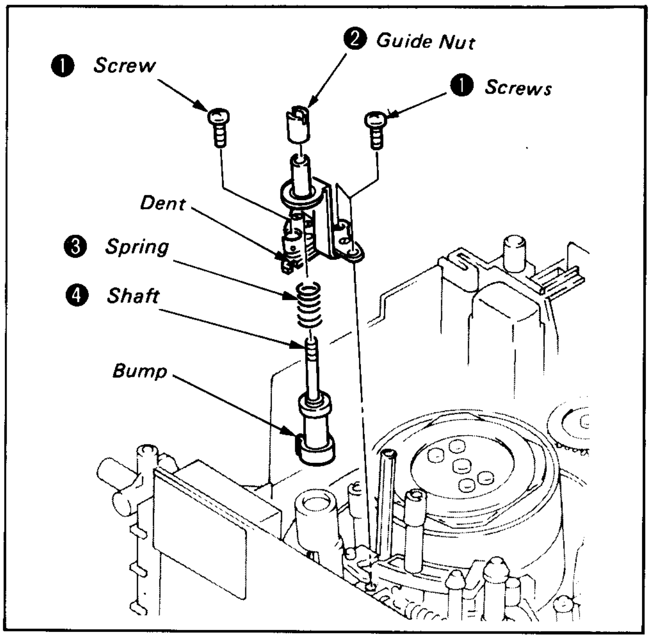

❶ Screw
❷ Guide Nut
❶ Screws
Dent
❸ Spring
❹ Shaft
Bump

Fig. 8-53.

8-3-21. FWD Back Tension Adjustment

Note: Prior to the adjustment, perform tape FWD running for over 2 minutes.

1) Set up the LOADING END and FWD modes.
2) Loosen the screw ❷ of the band adjustment plate ❶ , adjust the slit ❸ and pin ❹ of the tension regulator arm assembly to be in the position shown by the arrow Ⓐ in the Fig. 8-54, then tighten the screw ❷.
3) Place the reel (Ref. No. J-7) ❻ to measure tensions on the S reel table ❺ and run a tape along No. 1, 2 and 3 guides and the drum.
4) Pull the dial tension gauge (Ref. No. J-6) ❼ in the arrow Ⓑ direction and re-place the spring ❾ on the tension regulator spring hook assembly ❽ as mentioned below so that the value becomes 13.0 ± 1g. (See Fig. 8-54.)

Larger than standard . . . . .Arrow Ⓒ direction
Smaller than standard. . . . . Arrow Ⓓ direction

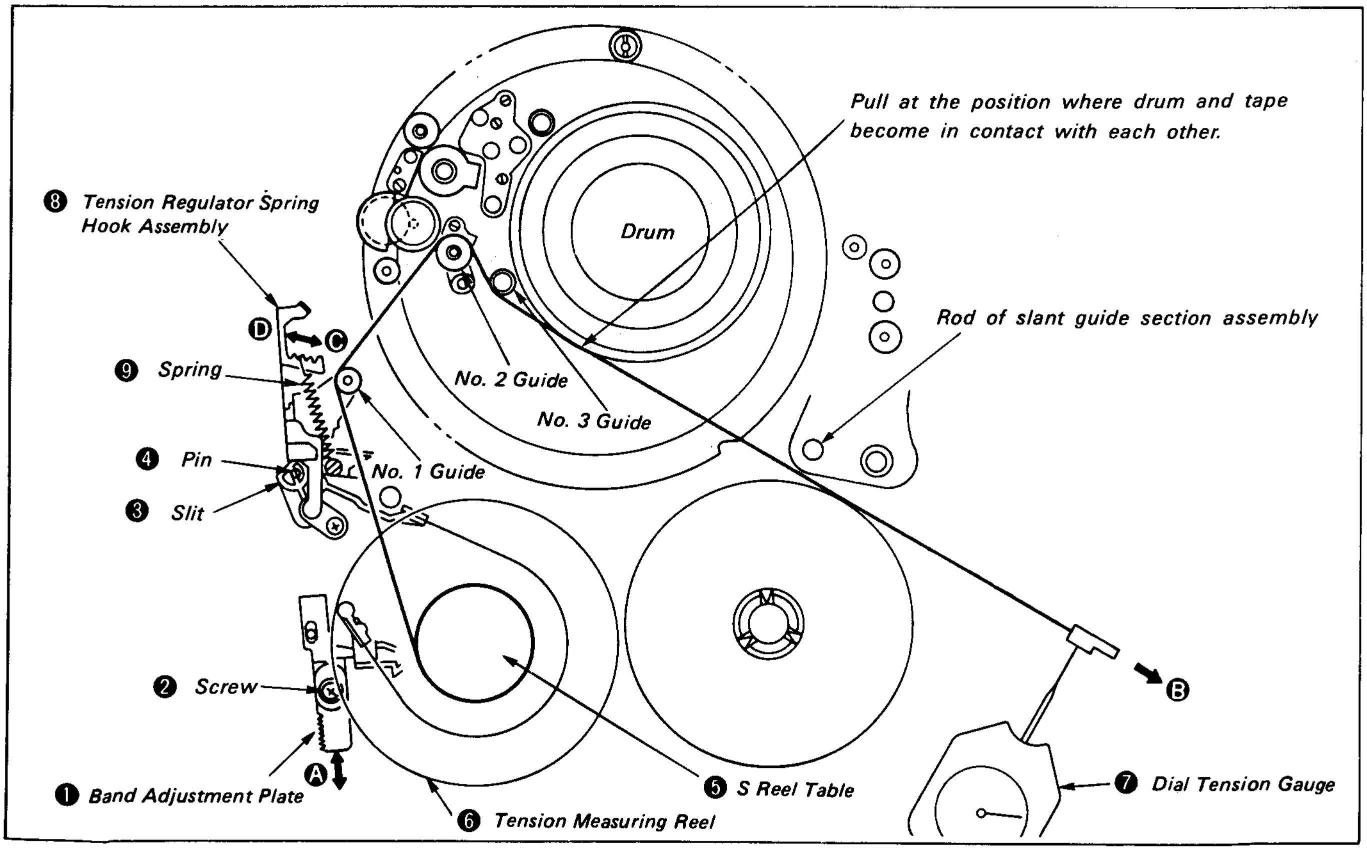

Pull at the position where drum and tape become in contact with each other.
❽ Tension Regulator Spring Hook Assembly
Drum
Ⓓ
Ⓒ
❾ Spring
Rod of slant guide section assembly
No. 2 Guide
No. 3 Guide
❹ Pin
No. 1 Guide
❸ Slit
❷ Screw
Ⓑ
Ⓐ
❶ Band Adjustment Plate
❺ S Reel Table
❼ Dial Tension Gauge
❻ Tension Measuring Reel

Fig. 8-54.

8-3-22. Checking and Adjustment of Timing Belt Tension

1) Remove the timing belt. (Refer to 1) of 1. Removal in 8-3-15.)
2) Cover the LED photodetector section (TS-55 Board) for tape end detection with a vinyl tape, and load.
3) Short-circuit Pin ③ of CN302 and GND on SS-64 board. (See Fig. 8-55.)
4) Disengage the pinch press arm side (round hook side) of the tension spring hooked on the pinch press arm assembly. (See Fig. 8-56.)
5) Hold the safety pin of the RECOG switch (rec proof side) and tape it. press the REC button to set up the REC mode. (See Fig. 8-57.)
6) Measure voltage (Vo) at both ends of R523 on DR-36 board with analog tester (Non-load state). (See Fig. 8-58.)
7) Remount the timing belt. (Refer to 4) of 2. Remounting in 8-3-16.
8) Remove the driving gear (B) assembly as instructed in 3) of 1. Removal in 8-3-14.
9) Set into REC mode in accordance with 5) and measure voltage (Vx) at both ends of R523 as in 6). (During tension adjustment)
10) Check that the voltage (Vx) during tension adjustment is 22 to 44mV higher than the voltage (Vo) in a no-load state. Adjust as follows if the voltage is not as required.

Adjustment Method:

- i) Loosen the screw ❶ , slide the idler assembly as shown by the arrow Ⓐ , and fix it by tightening the screw ❶. (See Fig. 8-59.)
- ii) Recheck after performing Step 9).
- iii) Repeat i) and ii) until the standard is satisfied.

11) Eliminate short-circuit between Pin ③ of CN302 and GND on SS-64 board.
12) Remount the driving gear (B) assembly and the tension spring of the pinch press arm assembly.

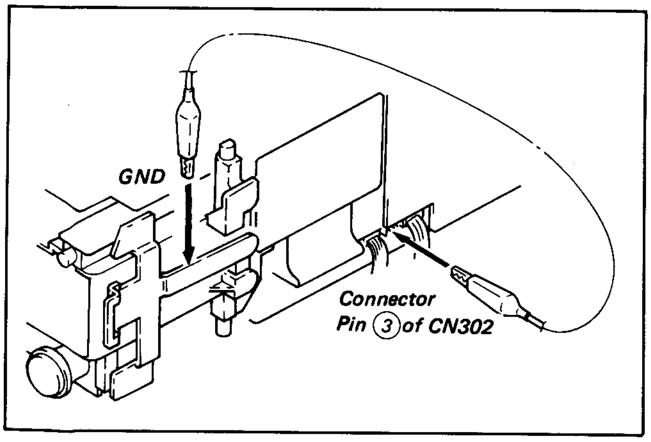


Fig. 8-55.

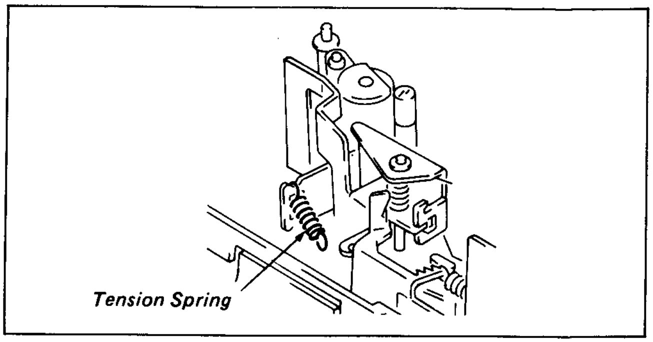


Fig. 8-56.

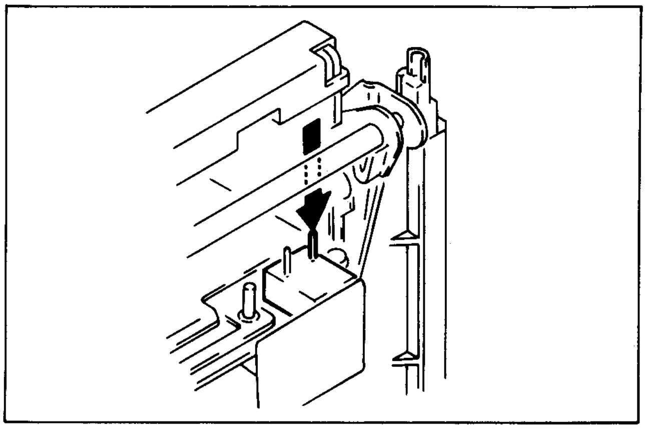


Fig. 8-57.

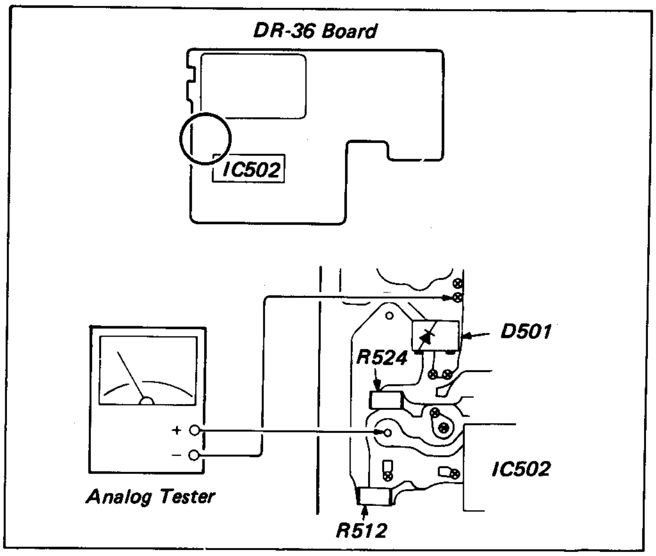


Fig. 8-58.

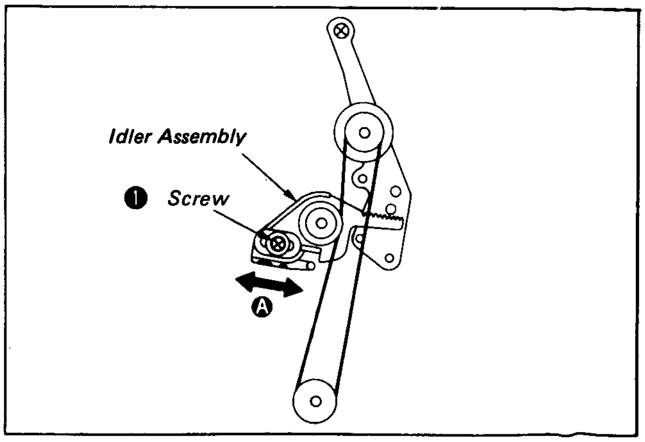


Fig. 8-59.

8-3-23. Checking S and T Main Brake Torques

1) Remove the battery holder assembly in accordance with 2-18.
2) Remove the cassette compartment assembly as instructed in 2-11.

1. S main brake torque

1) Set up the FF/REW mode.
2) place the tension measuring reel (Ref. No. J-8) on the S reel table.
3) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-60 and 61.)

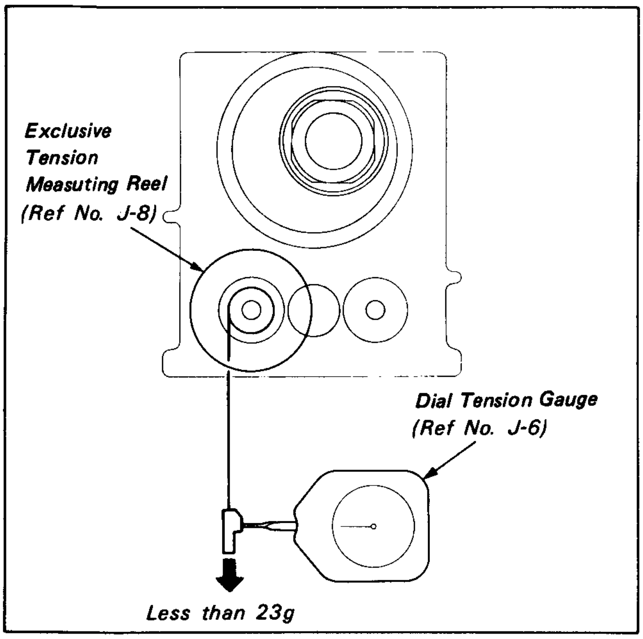

Exclusive Tension Measuting Reel (Ref No. J-8)
Dial Tension Gauge (Ref No. J-6)
Less than 23g

Fig. 8-60.

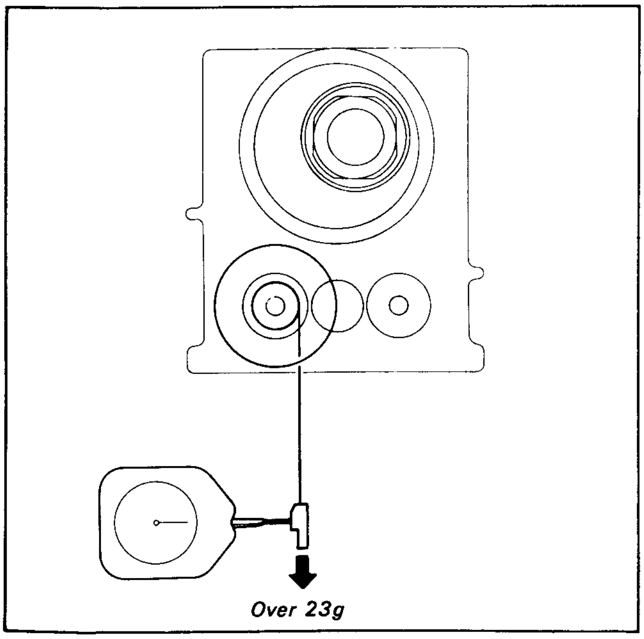


Fig. 8-61.

2. T main brake torque

1) Set up the FF/REW mode.
2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
3) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-62 and 63.)

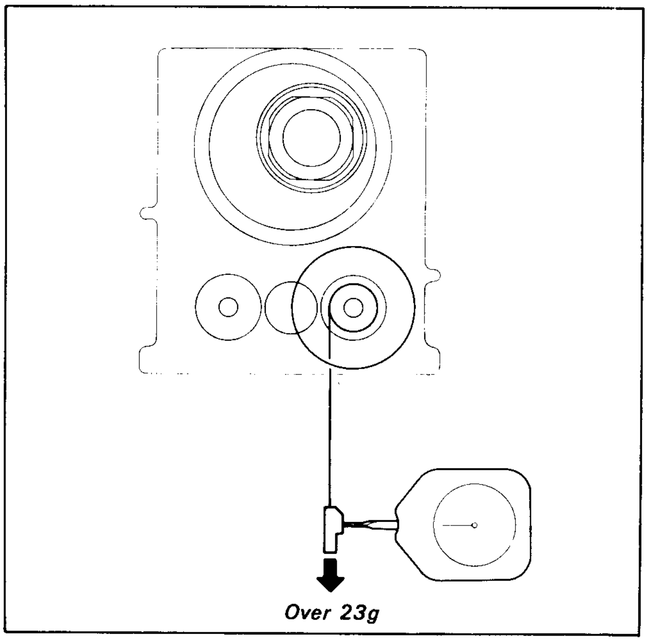


Fig. 8-62.

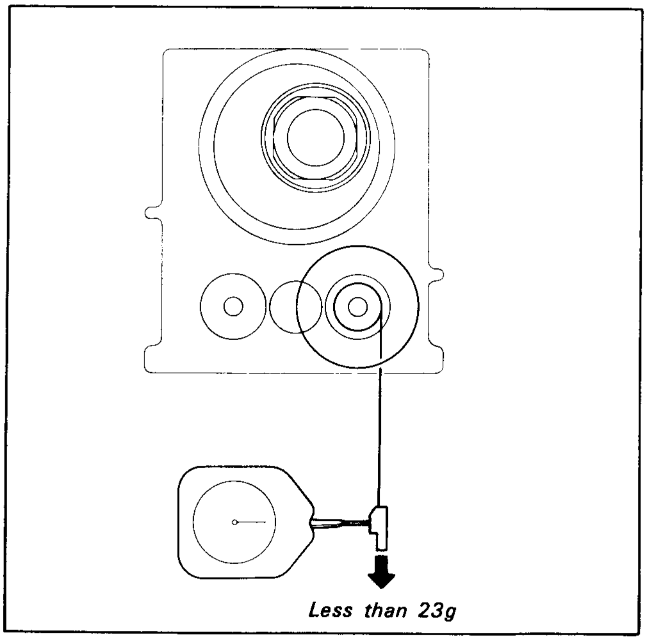

Less than 23g

Fig. 8-63.

8-3-24. Checking S and T Soft Brake Torques

1) Remove the battery holder assembly in accordance with 2-18.
2) Remove the cassette compartment assembly as instructed in 2-11.

1. S soft brake torque

1) Set up the FF/REW mode.
2) Place the tension measuring reel (Ref. No. J-8) on the S reel table.
3) Release the S main brake with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-64.)

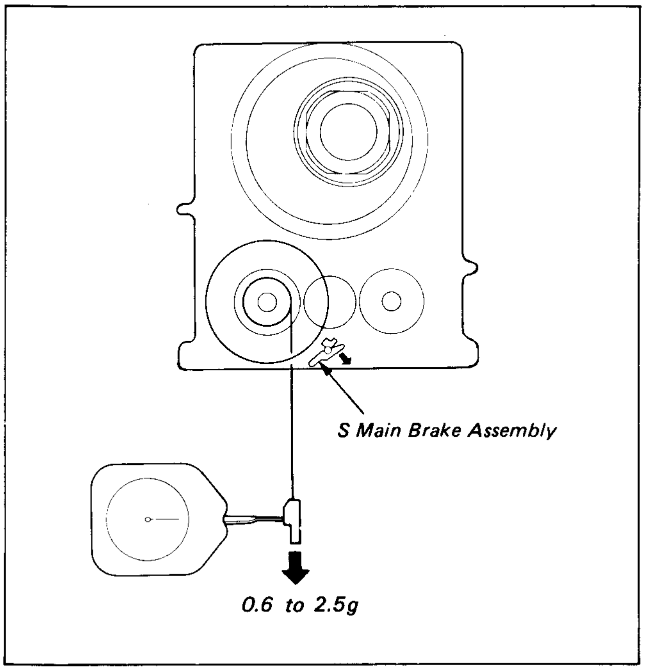


Fig. 8-64.

2. T soft brake torque

1) Set up the REV mode.
2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
3) Release the T main brake with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfied the required value. (See Fig. 8-65.)

Note: In the REV mode, both the T soft brake and REW brake are engaged.

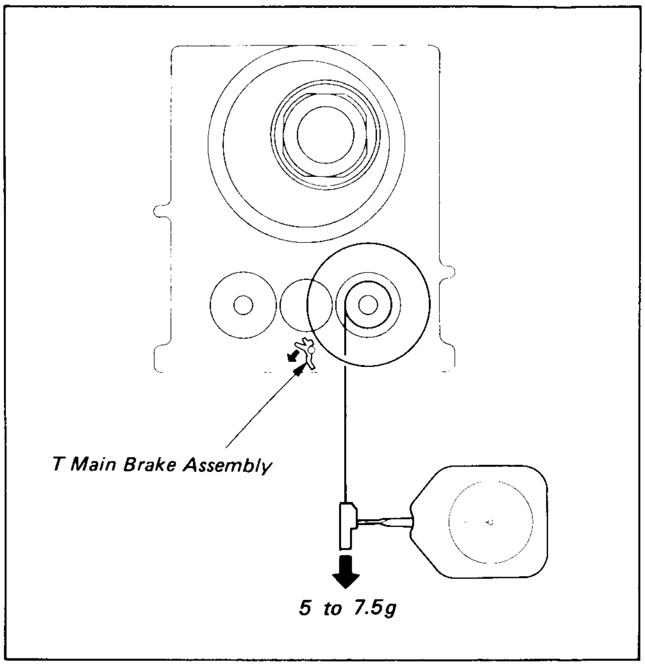


Fig. 8-65.

8-3-25. Checking REV and REW Brake Torques

1) Remove the battery holder assembly in accordance with 2-18.
2) Remove the cassette compartment assembly as instructed in 2-11.

1. REV brake torque

1) Set up the REV mode.
2) Place the tension measuring reel (Ref. No. J-8) on the S reel table.
3) Release the S main brake assembly with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-66.)

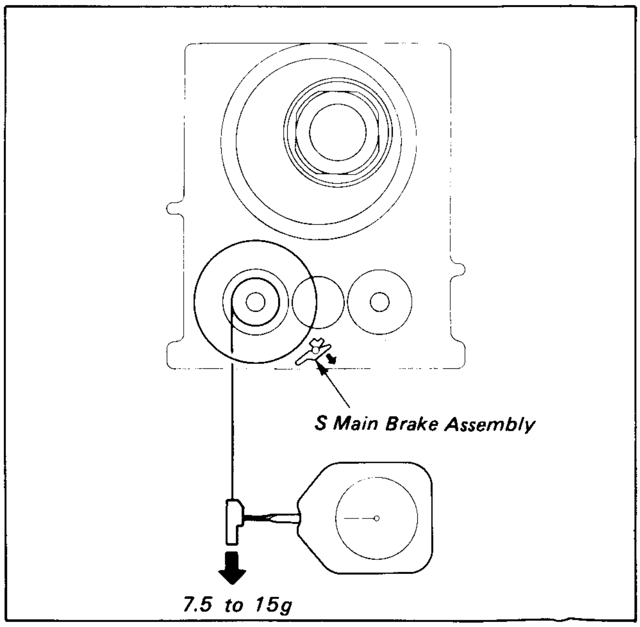


Fig. 8-66.

2. REV brake torque

1) Set up the FF/REW mode.
2) Place the tension measuring reel (Ref. No. J-8) on the T reel table.
3) Release T main brake with finger.
4) Pull the dial tension gauge (Ref. No. J-6) toward the arrow and check that the value satisfies the required value. (See Fig. 8-67.)

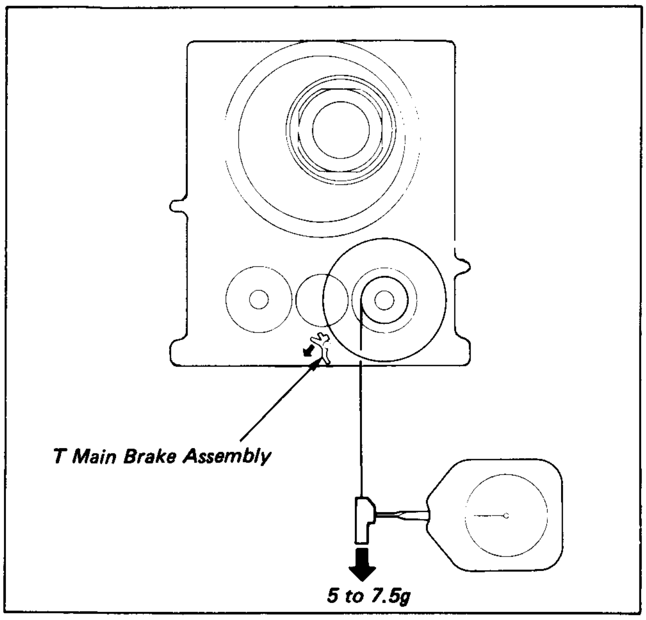


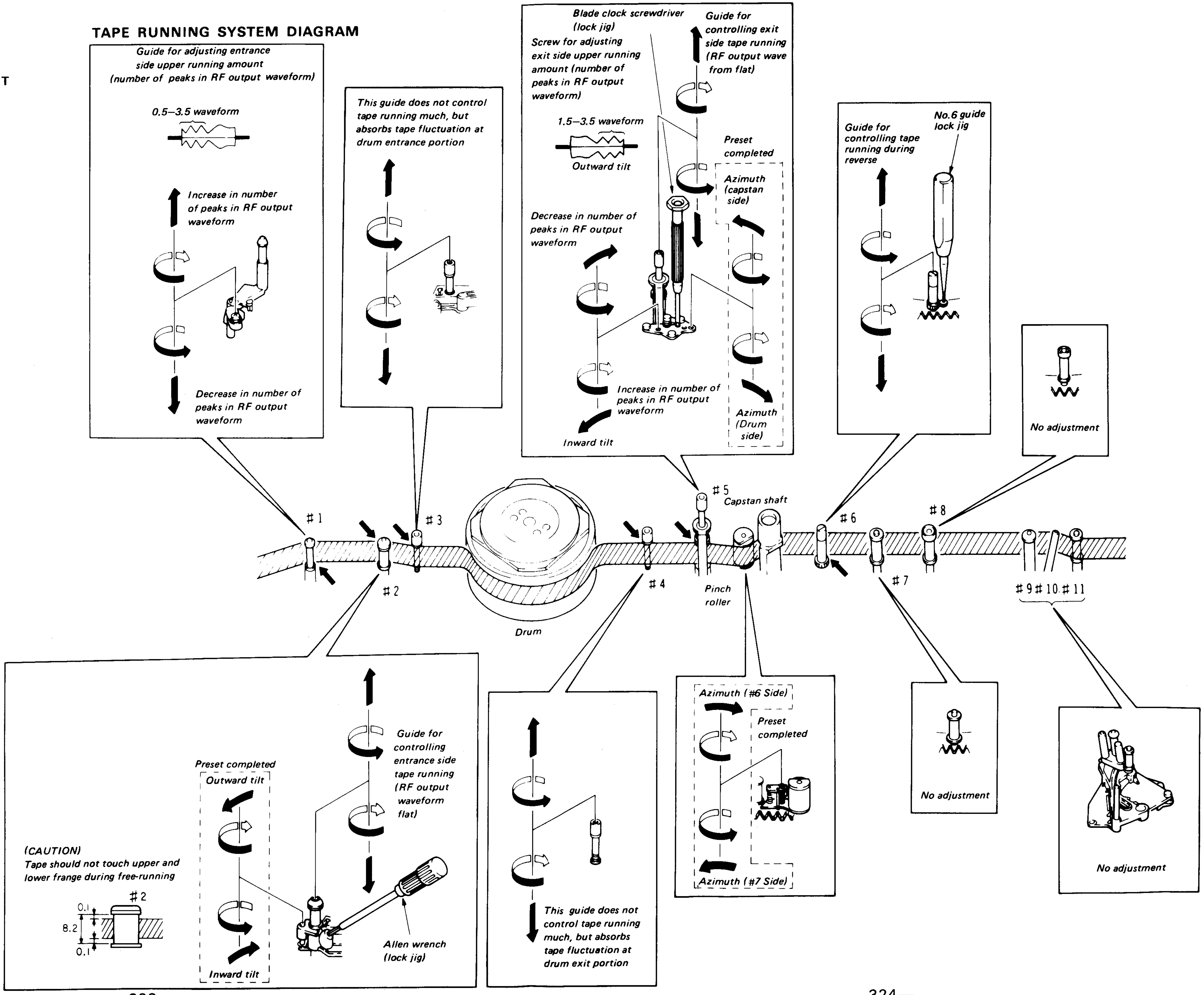
Fig. 8-67.

8-3-26. Checking by FWD and RVS Take-up Torque Cassette

1) Remove cassette cover in accordance with 2-2.
2) Set the FWD and RVS take-up torque cassette (Ref. No. J-12).
3) Set up the PLAY BACK mode and check that the torque value on the T reel table side is 9.5 to 15.5g·cm.
4) Set up the PLAY BACK mode and check that the torque value on the S reel table side immediately after pressing the REW button is 17 to 23g·cm.
5) Replace the reel tables if the foregoing values are not satisfied.

8-4. TAPE PATH ADJUSTMENT

TAPE RUNNING SYSTEM DIAGRAM


Guide for adjusting entrance side upper running amount (number of peaks in RF output waveform)
0.5–3.5 waveform
Increase in number of peaks in RF output waveform
Decrease in number of peaks in RF output waveform
This guide does not control tape running much, but absorbs tape fluctuation at drum entrance portion
Blade clock screwdriver (lock jig)
Screw for adjusting exit side upper running amount (number of peaks in RF output waveform)
Guide for controlling exit side tape running (RF output wave from flat)
1.5–3.5 waveform
Outward tilt
Preset completed
Azimuth (capstan side)
Decrease in number of peaks in RF output waveform
Increase in number of peaks in RF output waveform
Inward tilt
Azimuth (Drum side)
Guide for controlling tape running during reverse
No.6 guide lock jig
No adjustment
#1
#2
#3
Drum
#4
#5
Capstan shaft
Pinch roller
#6
#7
#8
#9 #10 #11
(CAUTION)
Tape should not touch upper and lower frange during free-running
#2
0.1
8.2
0.1
Preset completed
Outward tilt
Inward tilt
Guide for controlling entrance side tape running (RF output waveform flat)
Allen wrench (lock jig)
This guide does not control tape running much, but absorbs tape fluctuation at drum exit portion
Azimuth (#6 Side)
Preset completed
Azimuth (#7 Side)
No adjustment
No adjustment

[REGARDING TRACK SHIFT & MONITOR JIG]

The video 8 system employs a high precision tracking ATF (auto track finding) and instantaneously controls the tape running speed with the 4 kinds pilot signals. In this way, the tracking adjustment knob becomes unnecessary, and accurate tracing has become possible.
However, on the other hand, there has been difficulty in adjusting the tape path system with the ATF method. It was due to the fact that complete adjustment had been impossible to be performed because even when the tracing of the head had been a slightly off course, the ATF would perform correction automatically.
Because of this, adjustment is carried out to the tape path system by using the track shift & monitor jig (Ref. No J-6080-851-A). As the track shift and monitor jig forcibly releases the ATF and sets the tracking amount (track shift) manually, the adjustment of the tape path system can easily be carried out.

Perform this adjustment after the Section 7. camera adjustments and Section 9. video adjustments have been completed.

8-4-1. Connection with Track Shift 8 Monitor Jig

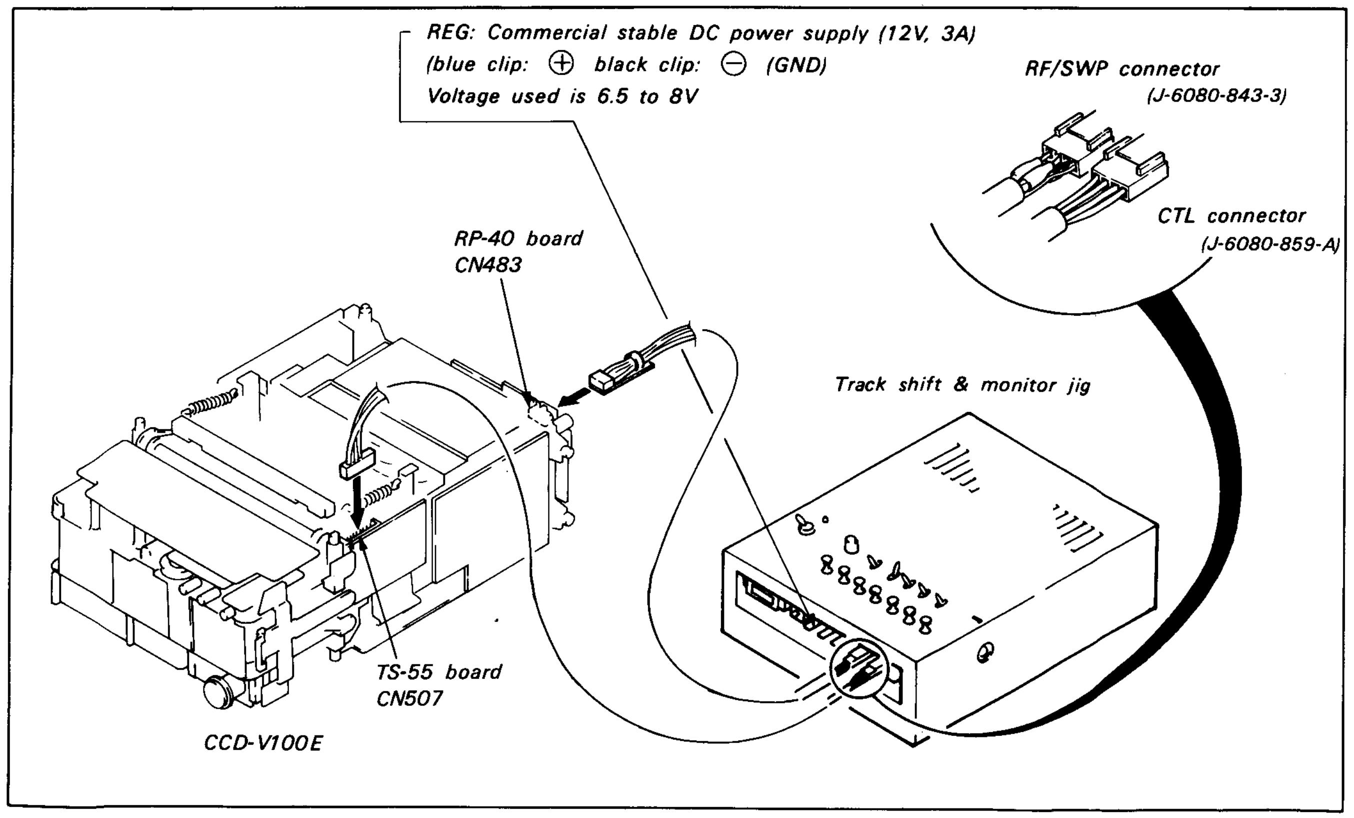

REG: Commercial stable DC power supply (12V, 3A)
(blue clip: ⊕ black clip: ⊖ (GND)
Voltage used is 6.5 to 8V
RF/SWP connector
(J-6080-843-3)
CTL connector
(J-6080-859-A)
RP-40 board
CN483
Track shift & monitor jig
TS-55 board
CN507
CCD-V100E

Fig. 8-68.

[Track Shift & Monitor Jig Power Supply]

The track shift & monitor jig has three types of connectors for external power supply, and the following three types of power supply can be used.

Connector Name	Power Supply
SYSTEM CONN	Connect modified CCD-V100E AC adapter AC-V8 E/UB. (Refer to the track shift and monitor jig instruction manual for the modification procedure.)
AC ADP	Betamovie AC adapter AC-M100E/UB is connected.
REG	Connect commercially sold DC stable power supply of more than 12V3A and use at 6.5 ~ 8V. Be sure to make correct ⊕ and ⊖ connections.

- Two or more types of power supply can not be used at the same time.
- In connecting the track shift & monitor jig always use the specified connector.
- Power supplies or voltages other than those given above should not be used.
- When using the modified AC-V8E/UB, the circuit power supply is cut off about 10 seconds after the AC-V8E/UB power switch is turned off.
- Power is not supplied to CCD-V100E itself, so be sure to supply AC power to it at the same time.

[Connector Connection]

Connect the track shift & monitor jig and CCD-V100E as shown in 8-68. Connect RF/SWP connector to RP-40 board CN483, and the CTL connector to TS-55 board CN507.

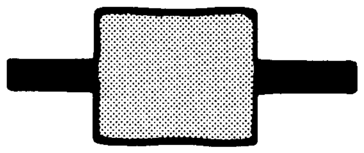
[Switch Settings]

SEL switch:	Set to ON when doing track shift. When OFF, control is from CCD-V100E side.
PATTERN switch:	Set to EV side.
ATF LOCK:	Set to OFF.

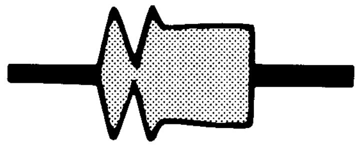
Other switches are not used during CCD-V100E adjustment.

8-4-2. Preparation for Adjustment

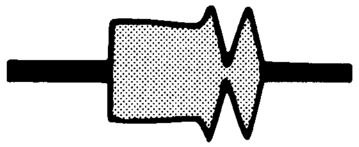
1) Perform cleaning of the tape running surface (the individual tape guides drums, capstan shafts and pinch rollers).
2) Connection of oscilloscope
   1ch: CH2 pin (RF signal)
   EXT TRIG: RF SWP pin (RF SWP signal) (Fig. 8-68)
3) Set the SEL switch of the track shift & monitor jig to OFF, then play back the alignment tape (WR5-1C) for tracking, and confirm that the RF waveform of both the entrance and exit sides become flat (Fig. ⓐ in 8-69). If the RF waveform of both sides is not flat, the adjustment should be carried out in accordance with the following.
   - * In case the RF waveform on the entrance side is not flat (Fig. ⓑ in 8-69) . . . Perform the adjustment in Item 8-4-3, Entrance side adjustment.
   - * In case RF waveform on the exit side is not flat (Fig. ⓒ in 8-69) . . . Perform the adjustment in Item 8-4-4, Exit Side Adjustment.



ⓐ Normal



ⓑ Entrance side is defective.



ⓒ Exit side is defective.

Fig. 8-69.

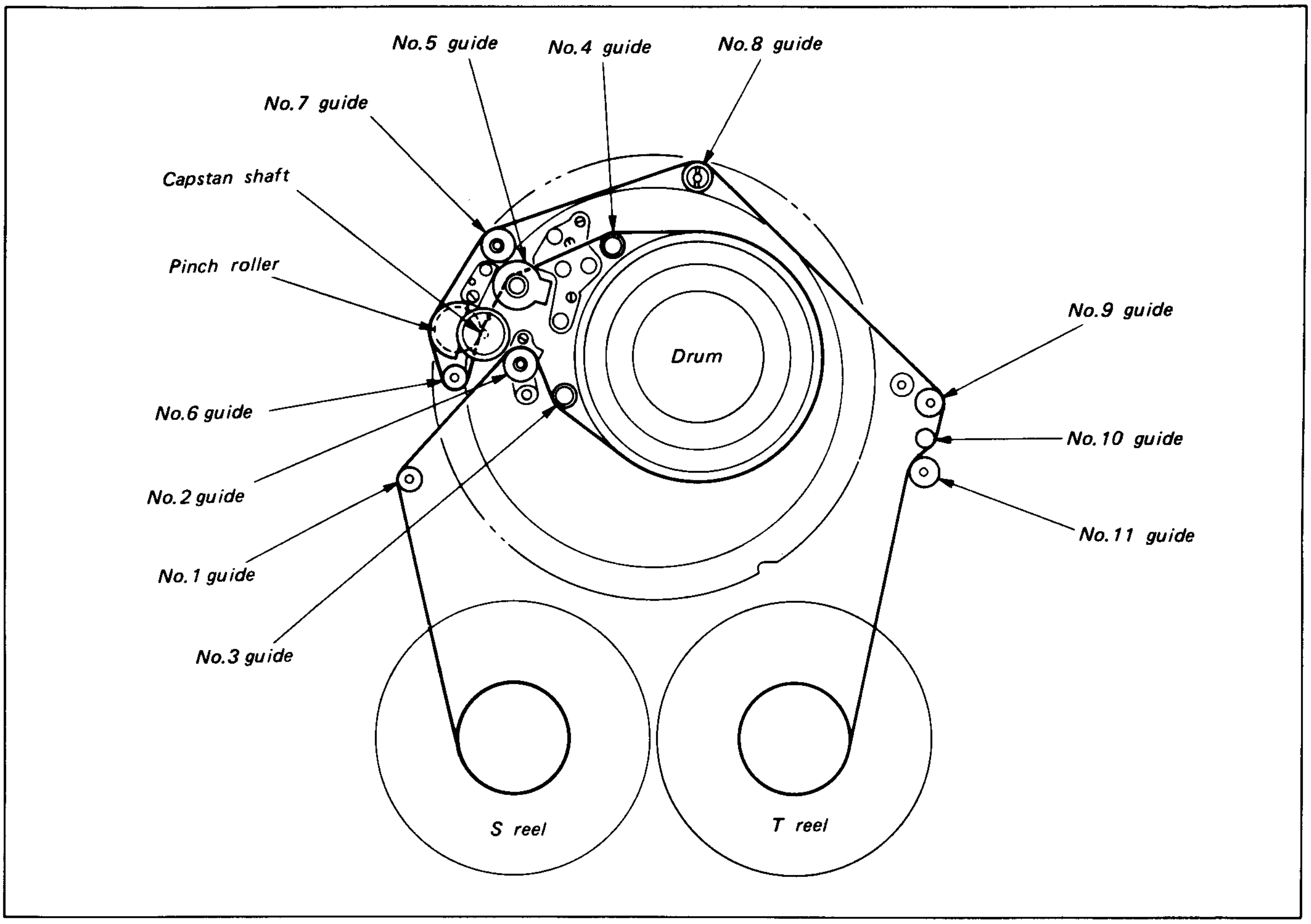

No.5 guide
No.4 guide
No.8 guide
No.7 guide
Capstan shaft
Pinch roller
No.9 guide
Drum
No.6 guide
No.10 guide
No.2 guide
No.11 guide
No.1 guide
No.3 guide
S reel
T reel

Fig. 8-70. Tape guide arrangement diagram

8-4-3. Entrance Side Adjustment

1) While playing back the tracking alignment tape (WR5-1C), loosen the No.2 guide lock screw ❶ with a hexagonal wrench screwdriver (7-700-766-01), and turn the No.2 and No.3 guides counterclockwise so that the running of the tape on the entrance side becomes free.
   (Fig. 8-71 (a), (b))

   Note: Since the space between the top and bottom flanges of No.2 guide is narrow, confirm that the tape is contacting neither top nor bottom flanges at this point. If No.2 guide is loosened excessively, the tape contacts the bottom flange and the RF waveform on the entrance side ceases to be the original free waveform.

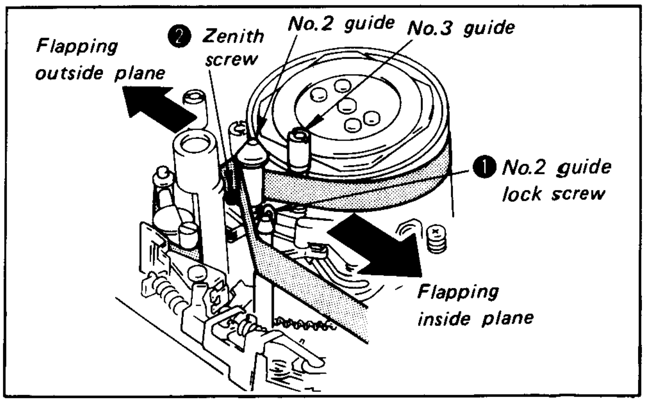

Flapping outside plane
❷ Zenith screw
No.2 guide
No.3 guide
❶ No.2 guide lock screw
Flapping inside plane

Fig. 8-71. (a)

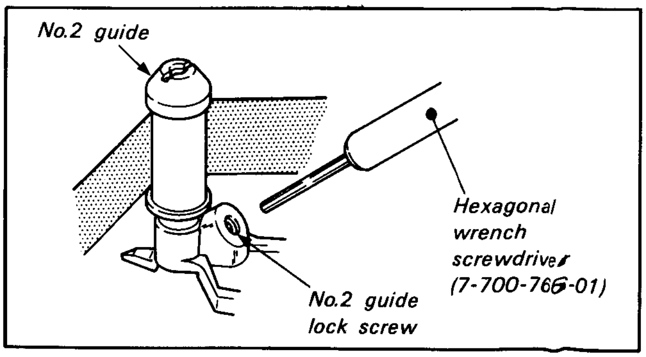

No.2 guide
Hexagonal wrench screwdriver (7-700-766-01)
No.2 guide lock screw

Fig. 8-71. (b)

2) Confirm that RF waveform on the entrance side has 0.5 to 3.5 peaks in this condition. If not, adjust as follows. (Fig. 8-72)

<less than 0.5 peak>
Adjust the No.2 guide zenith screw ❷ by turning it counterclockwise 90° at a time. (Fig. 8-71. (a))

<more than 3.5 peaks>
Adjust the height adjustment screw of No.1 guide (tension regulator assembly) by turning it counterclockwise 90° at a time. (Fig. 8-73)

* Height adjustment of the No.1 guide becomes possible after unloading the cassette and lowering the cassette compartment. Accordingly, the guide height adjustment can be achieved by performing loading and unloading of the cassette and the height adjustment alternately.

3) Slowly rotate the No.2 guide clockwise to make the entrance side waveform approximately flat (Fig. 8-74)
Note: Do not rotate No.2 guide excessively.

4) Set the SEL switch of the track shift & monitor jig to ON, then turn the track shift knob until the RF waveform amplitude is 2/3. (Fig. 8-75)

5) Turn No.2 guide so that the entrance side waveform flattens slightly. (Fig. 8-76)

6) Flatten the waveform with No.3 guide. (Fig. 8-77)

7) Turn off the SEL switch of the tracking shift & monitor jig and confirm that the RF waveform is as shown in a of Fig. 8-69.

8) Tighten the No.2 guide lock screw with a hexagonal wrench screwdriver. (See Fig. 8-71 (b).)
Note: Be sure to perform checking in accordance with 8-4-5.

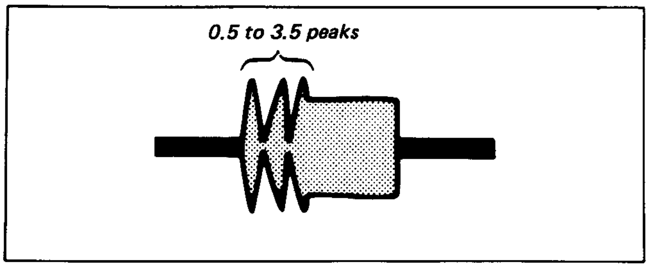

0.5 to 3.5 peaks

Fig. 8-72.

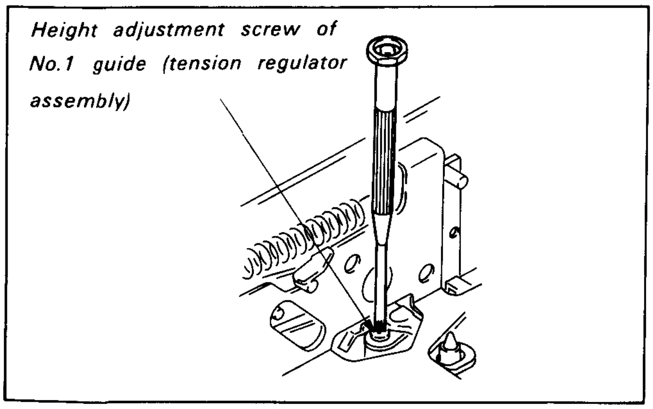

Height adjustment screw of No.1 guide (tension regulator assembly)

Fig. 8-73.

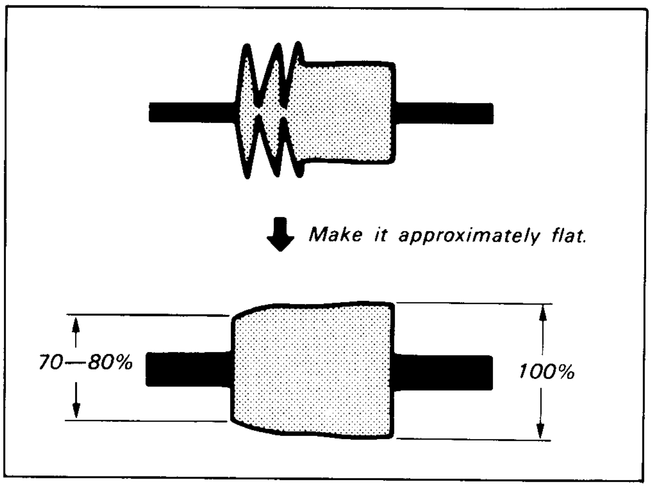

Make it approximately flat.
70—80%
100%

Fig. 8-74.

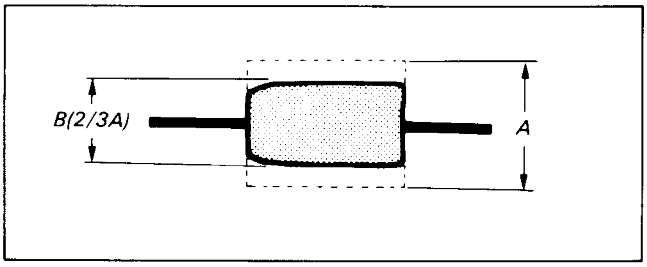


Fig. 8-75.

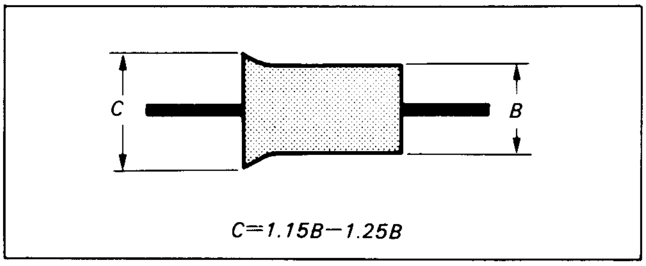

C
B
C=1.15B−1.25B

Fig. 8-76.

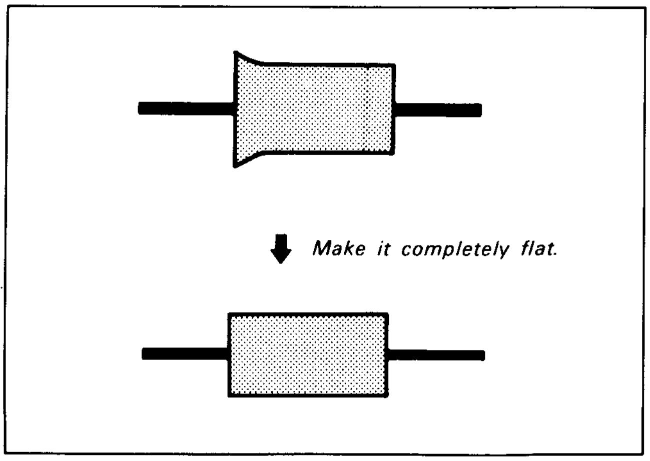

Make it completely flat.

Fig. 8-77.

8-4-4. Exit Side Adjustment

1) Play back the alignment tape (WR5-1C) for tracking and rotate No.4 guide counterclockwise and No.5 guide clockwise in order to make the tape running on the exit side free. (Fig. 8-78)

   Note:
   - If screw lock is stuck to the No.5 guide nut, it may prevent the nut from rotating. Rotate the guide after immersing the nut thread into alcohol and to dissolve the screw lock agent.
   - Check that the tape is not contacting the top and buttom of flanges of No.5 guide during free tape running.

2) Check that the RF waveform on the exit side has 1.5 to 3.5 peaks. If not, readjust as follows. (Fig. 8-79)

   If off standard

   i) Rotate the lock screw ❶ counterclockwise to loosen.

   ii) Slowly rotate the zenith screw ❷ 45° at a time and wait until the RF waveform varies.

   iii) Rotate the lock screw ❶ clockwise to tighten. (Fig. 8-78)

   Note:
   - The waveform varies if the lock screw is tightened too strongly. Tighten moderately.
   - Never rotate the azimuth screw of No.5 guide.

3) Rotate No.5 guide counterclockwise to make the RF waveform on the exit side approximately flat. (Fig. 8-80)

   Note: The waveform reaction is slow against nut rotation. Rotate the nut after the waveform variations are stabillzed.

4) Set the SEL switch of the track shift & monitor jig to ON, then turn the track shift knob until the RF waveform amplitude is 2/3. (Fig. 8-81)

5) Turn No.5 guide so that the exit side waveform flats slightly. (Fig 8-82)

6) Turn No.4 guide so that waveform flat. (Fig. 8-83)

7) Turn off the SEL switch of the tracking shift & monitor jig and confirm that the RF waveform is as shown in a of Fig. 8-69.

   Note: Be sure to perform checking in accordance with 8-4-5 after making the adjustment.

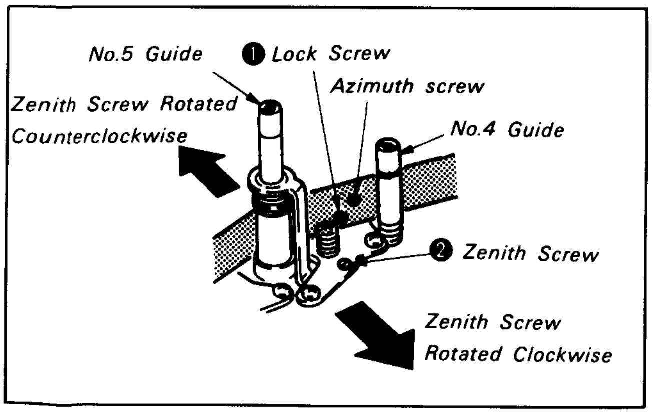

No.5 Guide
❶ Lock Screw
Zenith Screw Rotated Counterclockwise
Azimuth screw
No.4 Guide
❷ Zenith Screw
Zenith Screw Rotated Clockwise

Fig. 8-78.

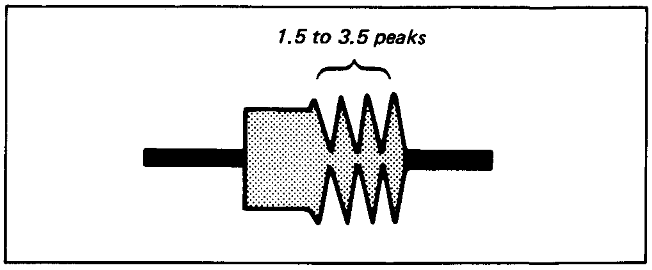

1.5 to 3.5 peaks

Fig. 8-79.

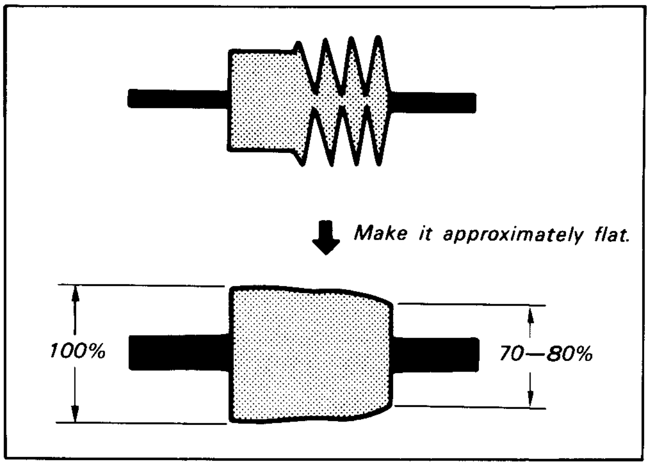

Make it approximately flat.
100%
70—80%

Fig. 8-80.

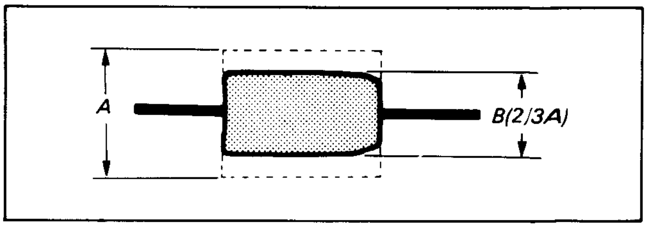


Fig. 8-81.

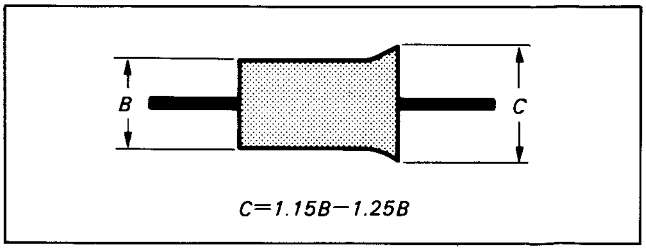

B
C
C=1.15B−1.25B

Fig. 8-82.

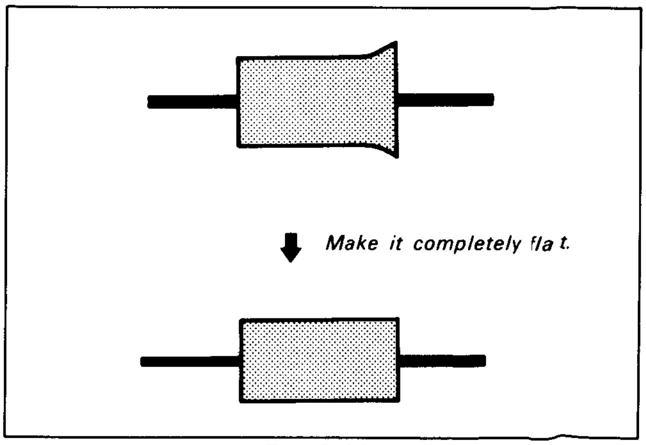

Make it completely flat.

Fig. 8-83.

8-4-5. Checking After Adjustment

1. Tracking check

1) Play back the alignment tape (WR5-1C) for tracking.
2) Set the SEL switch of the track shift & monitor jig to ON, and turn track shift knob until the RF waveform amplitude is 2/3. (8-84)

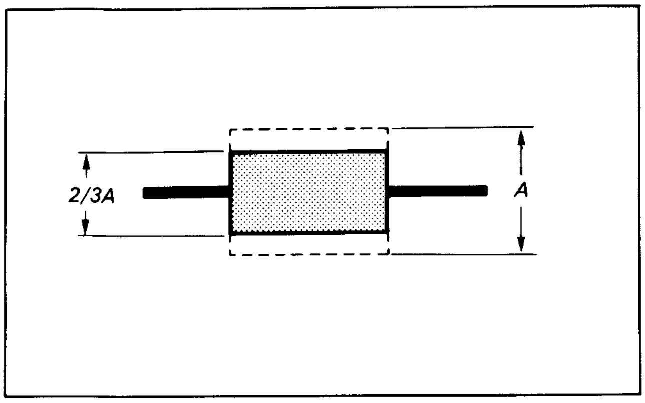


Fig. 8-84.

3) Comfirm that the RF waveform amplitude minimum value (E min) at this time is more that 80% of maximum value (E max.). (Fig. 8-85)

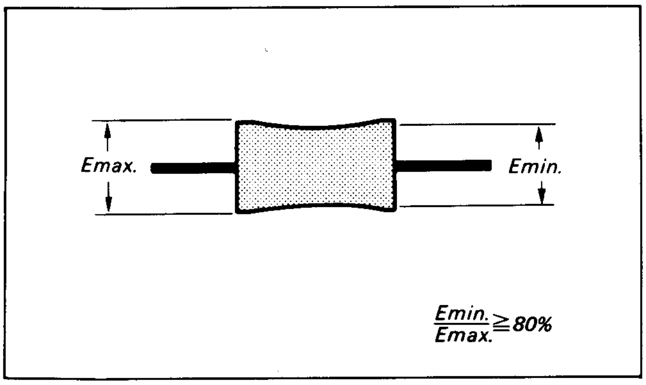

Emax.
Emin.
Emin./Emax. ≧ 80%

Fig. 8-85.

4) Check that the fluctuation amount of RF waveform entrance and exit sides both is as shown in Fig. 8-85.

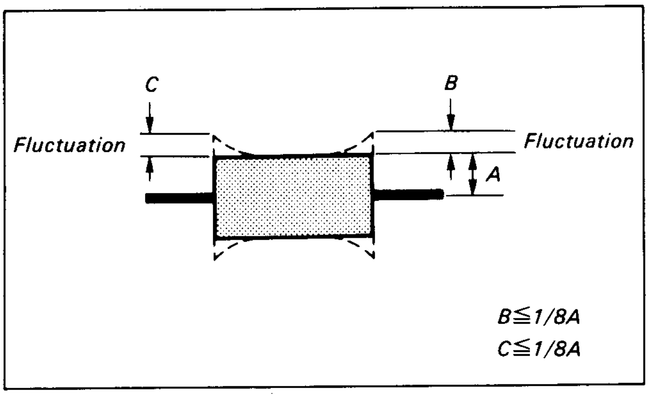

C
B
Fluctuation
Fluctuation
A
B≦1/8A
C≦1/8A

Fig. 8-86.

5) Set the SEL switch of the track shift & monitor jig to OFF.
6) Set up the REV mode and confirm that the waveform noise pitches are uniform. If not adjust as follows. (Fig. 8-87)

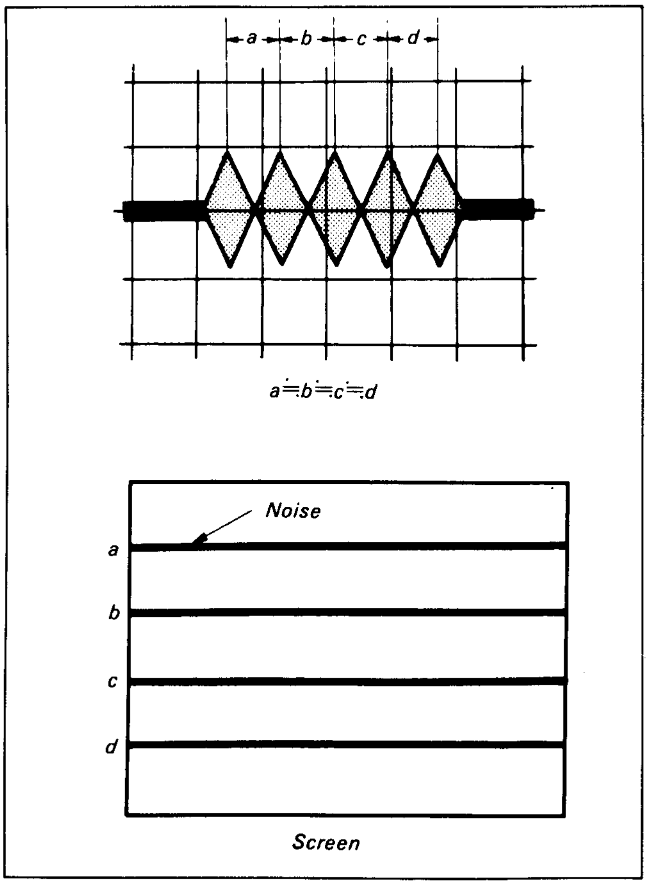

a
b
c
d
a≒b≒c≒d
Noise
a
b
c
d
Screen

Fig. 8-87.

[Narrow noise pitch on entrance side (upper screen)]
(Fig. 8-88)
Confirm that the RF waveforms are flat in the PLAYBACK mode.

Waveform is not flat:
Adjust the heights of No.2 and 3 guides as in 8-4-3. Entrance Side Adjustment.

Waveform is flat:
Check again by performing No.1 guide height and No.2 guide zenith adjustment according to 8-4-3. Entrance Side Adjustment.

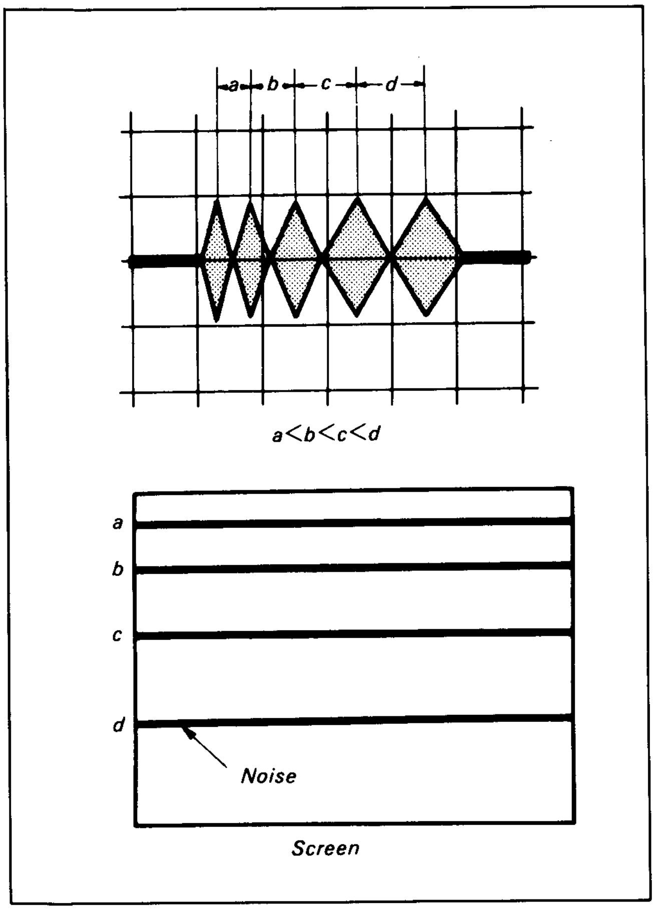


Fig. 8-88

[Narrow noise pitch on exit side (lower screen)]
(Fig. 8-89)
Set up the PLAYBACK mode and adjust No. 4 and 5 guide heights in accordance with 8-4-4. Exit Side Adjustment.

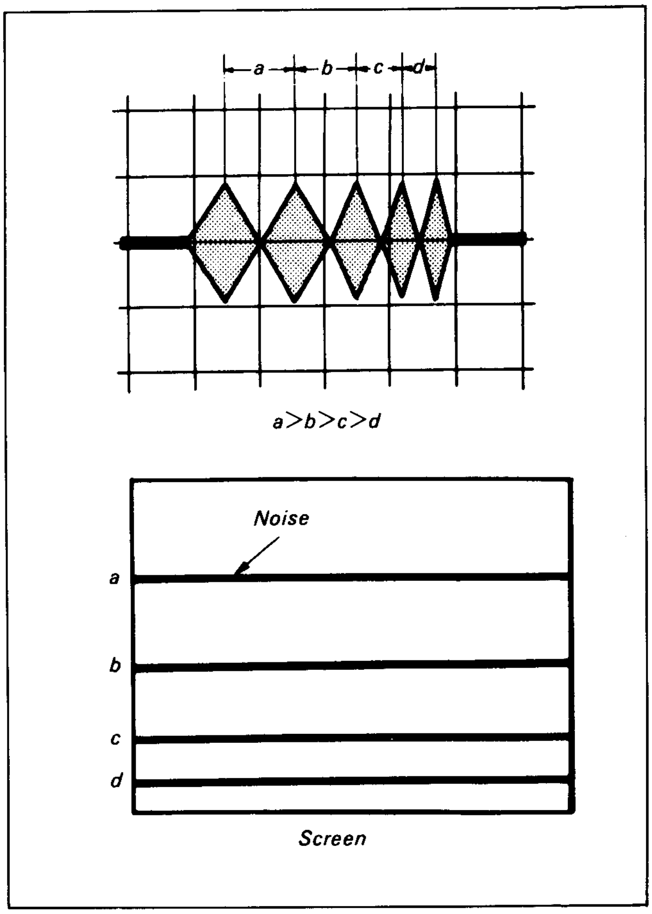


Fig. 8-89

[Wide noise pitch on exit side (lower screen)]
(Fig. 8-90)
Set up the PLAYBACK mode and confirm that the RF waveform is flat.

Waveform is not flat:
Adjustment height of No.4 and 5 guides in accordance 8-4-4. Exit Side Adjustment.

Waveform is flat:
Rotate the guide lower toothed wheel counterclockwise with No.6 guide lock jig (Ref. No.J-11) to loosen the toothed wheel. Rotate No.6 guide counterclockwise 45° to tighten the lower toothed wheel. Confirm the RF waveform of the REV mode again. (Fig. 8-91)

Note: Wrinkles may be caused in Part Ⓐ between the capstan spindle and No.5 guide, if No.6 guide is raised excessively. Confirm that no wrinkles have been caused. (Fig. 8-92)

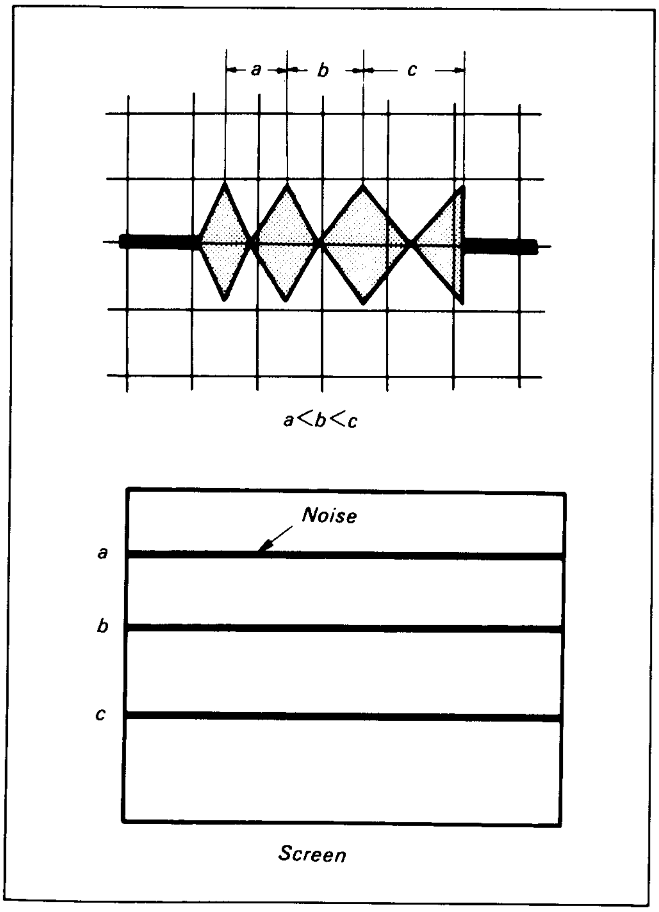

a
b
c
a<b<c
Noise
a
b
c
Screen

Fig. 8-90

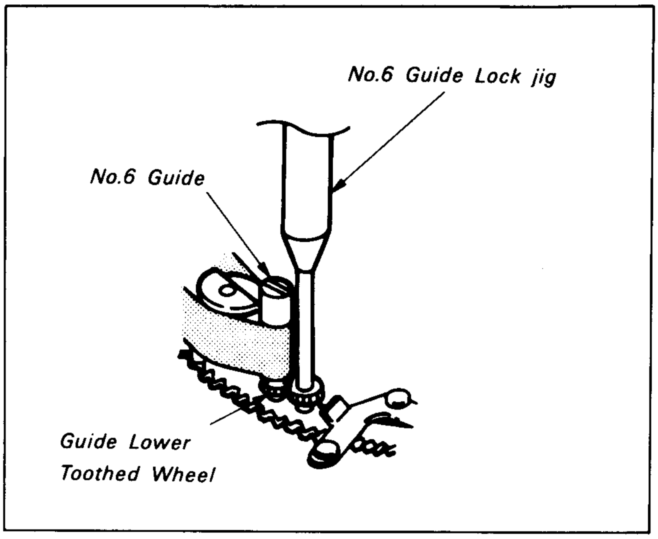

No.6 Guide Lock jig
No.6 Guide
Guide Lower Toothed Wheel

Fig. 8-91

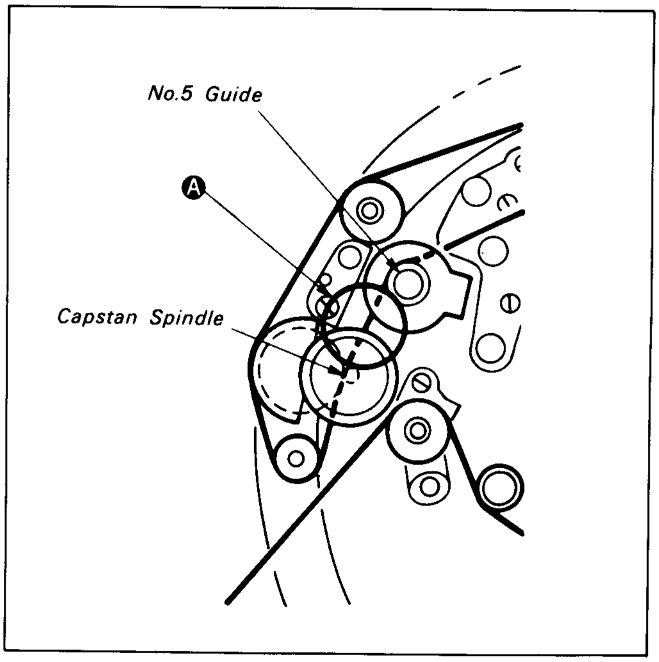

No.5 Guide
A
Capstan Spindle

Fig. 8-92

2. Checking rising edge

1) Check that the RF waveform rises horizontally during playback after finishing loading, after CUE/REV, and during playing back after FF. If not, adjust as follows.

[Noise emits from the exit side (lower screen) with rising during playback after finishing loading]
(Fig. 8-93)
Check that the FWD back tension is not too low.
If too low:
Readjust as instructed in 8-3-21. FWD Back Tension Adjustment.
If normal:
Rotate the azimuth screw of the pinch roller clockwise 5° at a time and adjust after rechecking the rising edge. (Fig. 8-94)

[Noise emits from the exit side (lower screen) with rising during playback after REV]
(Fig. 8-93)
Loosen the guide lower toothed wheel of No.6 guide using No.6 guide lock jig, rotate No.6 guide 90° counterclockwise to tighten the toothed wheel, then recheck the rising edge.

Note: Wrinkles may be caused in Part Ⓐ of Fig. 8-92, if No.6 guide is raised excessively at this time, between the capstan spindle and No.5 guide, so check that no wrinkles are caused.

[Noise emits from the exit side (lower screen) with rising during playing back after FF]
(Fig. 8-93)
Confirm that the FWD back tension is not too low.
If too low:
Readjust as required in 8-3-21. FWD Back Tension Adjustment.
If normal:
Rotate the azimuth screw of the pinch roller clockwise by 5° at a time and adjust after checking the rising edge. (Fig. 8-94)

Note: Be sure to check play rising after finishing loading in case an adjustment is made.

3. Tape running check

In playback and REV modes, there should be no spaces and curl should be within 0.3 mm for No.1, 2 and 5 guides at No.1—No.6 guide flanges (Fig. 8-95). Check also that there is no space or curl at No.3, 4 and 6 guides.

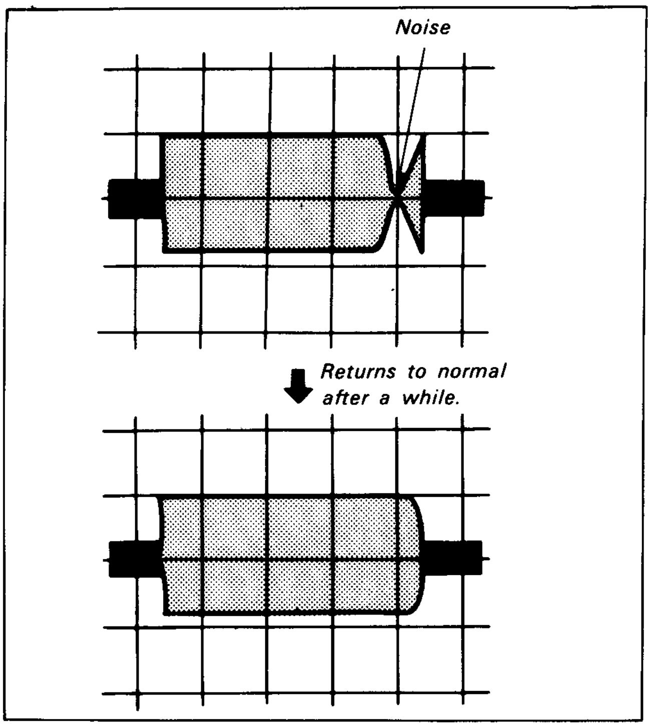

Noise
Returns to normal after a while.

Fig. 8-93

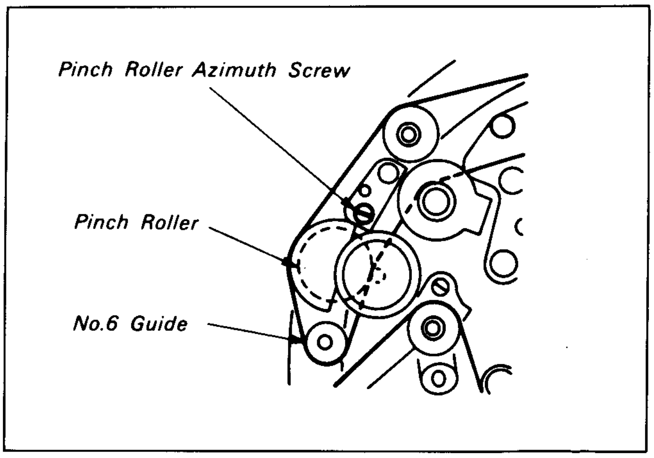

Pinch Roller Azimuth Screw
Pinch Roller
No.6 Guide

Fig. 8-94

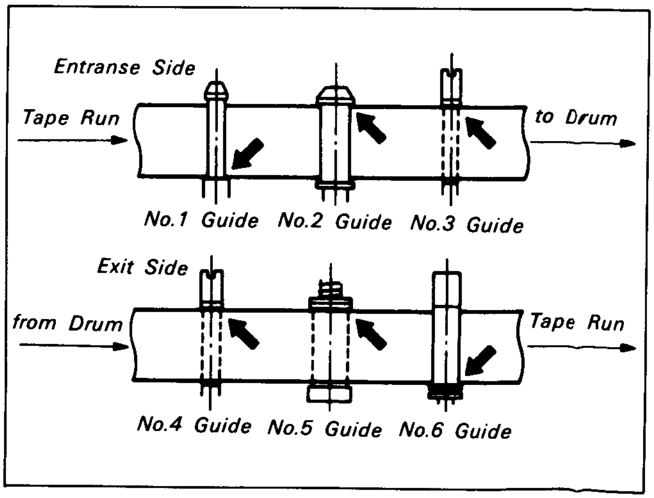

Entranse Side
Tape Run
to Drum
No.1 Guide
No.2 Guide
No.3 Guide
Exit Side
from Drum
Tape Run
No.4 Guide
No.5 Guide
No.6 Guide

Fig. 8-95

SECTION 9
VIDEO ADJUSTMENTS

During the adjustment, see the parts arrangement diagram relevant to the adjustment on page 350.

For the adjustment of the VTR block, use the following measuring equipment.

[Equipment to be used]

1) Monitor TV
2) AC adaptor or T/T unit
3) Dual trace oscilloscope of over 10 MHz band which incorporates delay mode (Unless otherwise specified, use 10 : 1 probe.)
4) Frequency counter
5) Pattern generator incorporates video output terminal
6) Digital voltmeter
7) Audio generator
8) Audio level meter
9) Audio distortion meter
10) Audio attenuator
11) Regulated-DC power supply
12) Alignment tape
    Tracking adjustment (WR5-1C)
        Parts Code: 8-967-995-06
    Video frequency response adjustment (WR5-2C)
        Parts Code: 8-967-995-16
    Operation check (WR5-3CL)
        Parts Code: 8-967-995-36
    Operation check (WR5-3CSP)
        Parts Code: 8-967-995-27

[Precautions for adjustment]

In the video block adjustment, it can be performed even by removing the camera block and EVF block except for "Battery down adjustment" of the system control system adjustment. When removing the camera and EVF blocks, disconnect the following seven connectors.

1.	EM-1 board	CN402 (BLK)
2.	EM-1 board	CN905 (YEL)
3.	EM-1 board	CN906 (BLK)
4.	SS-64 board	CN303 (WHT)
5.	SS-64 board	CN308 (WHT)
6.	AU-25 board	CN403 (RED)
7.	CP-18 board	CN704

In the servo system adjustments; namely, "MOTOR POWER voltage adjustment", "Notch filter f₀ adjustment" and "ATF BPF balance adjustment" and almost all adjusting items of the video system adjustments, it is necessary to perform the adjustments by opening the AU-25, RP-40, and VI-22 boards. In this case, moreover, the adjustment should be performed by removing CN405 (WHT) on the AU-25 board.

[Connection of equipments]

Unless otherwise specified, perform the adjustment by connecting the measuring equipment as shown in figure below.

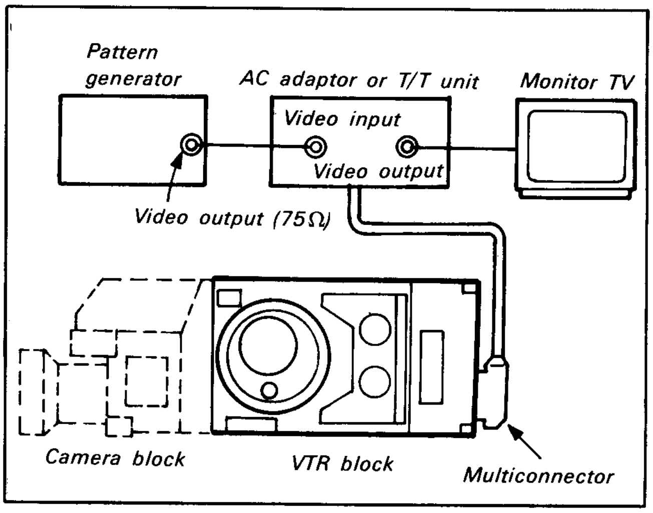


Fig. 9-1.

[Set-up during adjustment]

Since the video output signal obtained from the pattern generator is used as the adjusting signal of the VTR block adjustment, it is necessary that this video output signal has to be within the specification. Connect an oscilloscope to Pin ⑩ (VIDEO IN) of CN385 on the SC-6 board and make sure that the amplitude of the video SYNC signal is approximately 0.3V, that the video block is approximately 0.7V, that the burst signal is 0.3V with flat characteristics, and the signal level ratio between the burst signal and "Red" signal is 0.30 : 0.66.

The video signal (colour bar) used in the VTR block adjustment is an shown in Fig. 9-2.

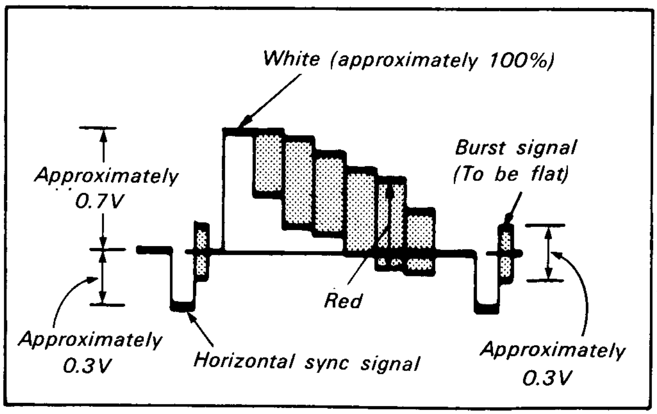
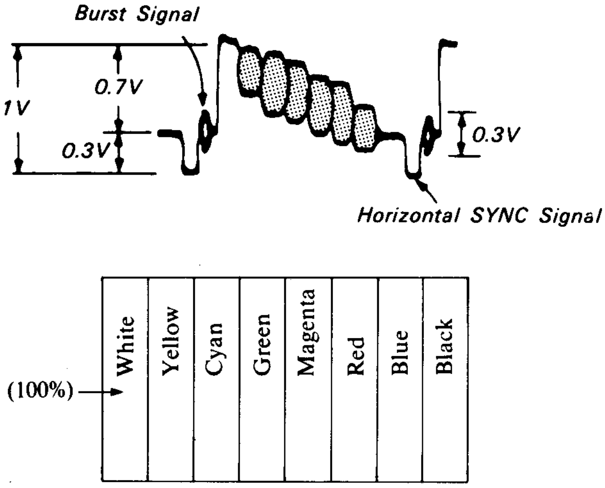


Fig. 9-2. Colour bar signal of pattern generator

[Alignment tape]

Tape	Content	Use
Tracking (WR5-1C)	1. Recording area: PCM — video 2. Recording content: CH2: 1 MHz linearity adjustment signal (CH1: 9 MHz)	Drum linearity adjustment
Video Frequency Response (WR5-2C)	1. Recording area: Video 2. Recording content: RF sweep 0 to 10 MHz 3. Marker: 1, 3.58, 5.5 and 7 MHz	Ferquency characteristic adjustment
Operation Check SP mode (WR5-3CSP) LP mode (WR5-3CL) Note: PCM area is not incloded in WR5-3CL.	1. Recording area: Video 2. Recording content: ■ Video track • Video signals Colour bars 10 sec } Iterative Monoscope 8 sec (Colour bars)  Burst Signal 1V 0.7V 0.3V 0.3V Horizontal SYNC Signal (100%) White Yellow Cyan Green Magenta Red Blue Black • Audio signals (AFM) 400 Hz 60% modulation ■ PCM track (WR5-3CSP only) • Audio signals (PCM) 1kHz 0dBs 10sec } Iterative 20Hz −6dBs 2sec 400Hz −6dBs 4sec 14kHz −0.7dBs 2sec	Operation check

[T/T unit or AC adaptor I/O level and impedance]

Video input Pin jack
  Input signal: 1 Vp-p, 75Ω unbalance, negative SYNC
Video output Pin jack
  Output signal: 1 Vp-p, 75Ω unbalance, negative SYNC
Audio input Pin jack
  Input level: −6dBs (0dBs=0.775 Vrms)
  Input impedance: Over 47 kΩ
Audio output Pin jack
  Specified output: −6dBs with 47 kΩ load
  Loading impedance: Over 10 kΩ

9-1. POWER SUPPLY CHECK (VI-22 BOARD)

9-1-1. REG 5V Check

Mode	Stop
Measurement Point	Positive probe: Pin ⑥ of CN204 (AUDIO 5V) Pin ⑧ of W202 (VIDEO 5V) Pin ⑤ of W203 (S/S 5V) Negative probe: GND
Measuring Instrument	Digital voltmeter
Specified Value	5.0±0.15Vdc

Checking method:

1) It should be 5.0±0.15Vdc.

9-2. SYSTEM CONTROL ADJUSTMENT

9-2-1. Battery Down Adjustment (TS-55, SK-12 Boards)

Mode	Camera mode REC
Object	Arbitrary
Measurement Point	TP502 on TS-55 board ($\overline{\text{BATT DOWN}}$)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV506 on TS-55 board
Specified Value	5.77±0.01Vdc.

Connection:

1) Remove multiconnector and connect the regulated-DC power supply and digital voltmeter as shown in Fig. below.

Note: Be sure to perform the adjustment by connecting the camera block.

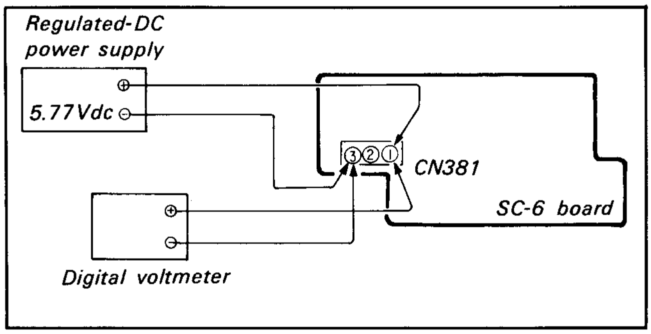


Fig. 9-3.

Adjusting method:

1) Connect TP301 ($\overline{\text{TEST}}$) on the SK-12 board and GND with a jumper and set to test mode.
2) Adjust the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.77±0.01Vdc. (VTR is in REC mode)
3) Turn slowly RV506 on the TS-55 board and set the DC level of TP502 on the TS-55 board to the point where it is about to turn "L" from "H".
4) Remove the jumper.

Checking method:

Perform the following checks and if the results are not satisfied, repeat the checks again.

1) Adjust the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.90±0.01Vdc. (VTR is in REC mode)
2) Make sure that the 🔋 mark of the LCD does not light on and the TALLY lamp does not flicker.
3) Decrease the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.85±0.01Vdc.
4) Make sure that the 🔋 mark of the LCD and the TALLY lamp flicker every other second.
5) Decrease the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.75±0.01Vdc.
6) Make sure that the VTR is stopped and the power supply is turned OFF.

9-3. SERVO SYSTEM ADJUSTMENT

9-3-1. MOTOR POWER Voltage Adjustment (SS-64 Board)

Mode	Stop
Measurement Point	Pin ⑩ of CN501
Measuring Instrument	Digital voltmeter
Adjusting Element	RV301
Specified Value	5.30±0.05Vdc

Adjusting method:

1) Adjust with RV301 so that it becomes 5.30±0.05Vdc.

9-3-2. Notch Filter fo Adjustment (SS-64 Board)

Mode	Stop
Signal	See Fig. 9-4
Measurement Point	
Measuring Instrument	Oscilloscope, audio generator, and frequency counter
Adjusting Element	RV501
Specified Value	Signal output of 25 Hz is minimize

Connection:

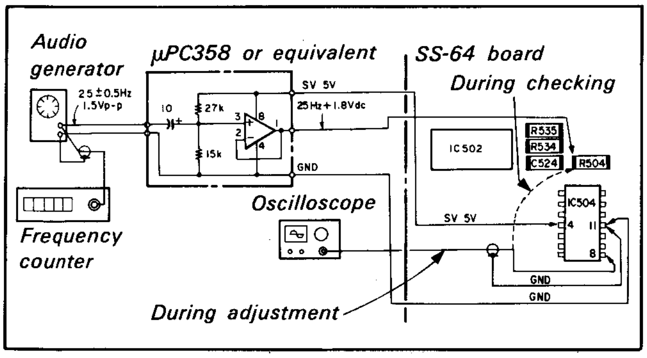

Audio generator
25±0.5Hz
1.5Vp-p
μPC358 or equivalent
SV 5V
25Hz+1.8Vdc
10
27k
15k
GND
SS-64 board
During checking
IC502
R535
R534
C524
R504
IC504
SV 5V
GND
GND
Oscilloscope
Frequency counter
During adjustment

Fig. 9-4.

Adjusting method:

1) Adjust the oscillating frequency of the audio generator to 25±0.5 Hz.
2) Connect an oscilloscope to R504 and check the following 2 points: (See Fig.9-4)
   1. Make sure the DC level is approximately 1.8Vdc when the audio generator is turned OFF.
   2. Adjust the audio generator output level so that the 25 Hz sine wave signal level becomes 1.5 Vp-p.
3) Connect an oscilloscope to Pin ⑧ of IC504.
4) Adjust with RV501 so that the 25 Hz signal level becomes minimum.

Minimize the amplitude

Fig. 9-5. 25 Hz notch filter adjustment

9-3-3. Drum Free Speed Adjustment (TS-55 Board)

Mode	REC
Signal	Arbitrary
Measurement Point	Pin ① (ADE) of CN507
Measuring Instrument	Digital voltmeter
Adjusting Element	RV501
Specified Value	2.3±0.1Vdc c

Adjusting method:

1) Adjust with RV501 so that it becomes 2.3±0.1Vdc. c.

9-3-4. Capstan Free Speed Adjustment (TS-55, RP-40 Boards)

Mode	Playback
Signal	Arbitrary tape
Measurement Point	Pin ⑥ (CFG) of CN507 on TS-55 board
Measuring Instrument	Frequency counter
Adjusting Element	SP mode: RV502 on TS-55 board LP mode: RV503 on TS-55 board
Specified Value	SP mode: 1341±2 Hz LP mode: 671±1 Hz

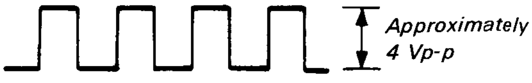
Connection:

1) Connect Pin ⑯ (TP484: SL CHECK) and GND on the RP-34 board on the RP-40 board with an electrolytic capacitor. (GND is on the negative side of the capacitor.)
2) Connect Pin ③ (ATF LOCK) and GND of CN507 on the TS-55 board with a jumper.

Adjusting method:

The adjusting element of LP mode is shown in parentheses [ ].

1) Set the SP/LP switch (S309 on the SK-12 board) to the position of the SP [LP].
2) Turn "VTR POWER" from OFF to ON.
3) Adjust with RV502 [RV503] so that it becomes 1341±2 Hz [671±1 Hz] in the playback mode.


Approximately 4 Vp-p

1341±2 Hz (SP mode)
671±1 Hz (LP mode)

Fig. 9-6.

9-3-5. Switching Position Adjustment (TS-55 board)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3CSP)
Measurement Point	CH1: TP208 on VI-22 board (Pin ① of CN206: VIDEO OUT) CH2: Pin ② of CN483 (RF SWP) on RP-40 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV507 on TS-55 board
Specified Value	6.5±0.3H (416±20 μsec)

Adjusting method:

1) Adjust with RV507 on the TS-55 board so that it becomes 6.5±0.3H (416±20 μsec).

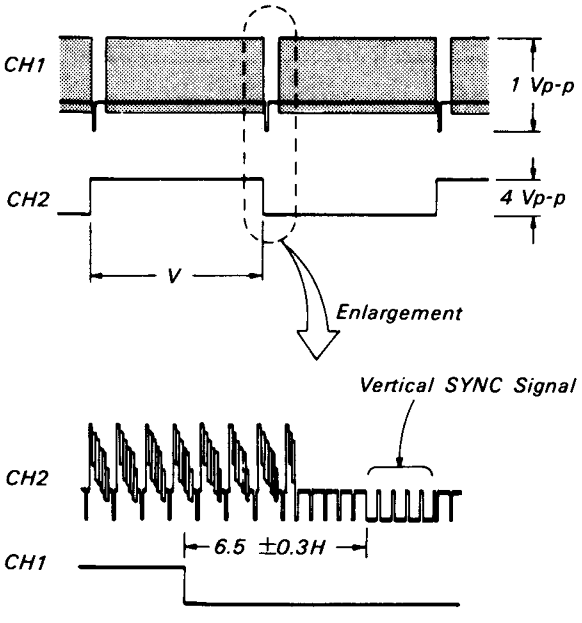

CH1
1 Vp-p
CH2
4 Vp-p
V
Enlargement
Vertical SYNC Signal
CH2
CH1
6.5 ±0.3H

Fig. 9-7. Switching position adjustment

9-3-6. ATF BPF Balance Adjustment (SS-64 Board)

Mode	Playback
Signal	See Fig. 9-8
Measurement Point	See Fig. 9-8
Measuring Instrument	Oscilloscope, audio generator, and frequency counter
Adjusting Element	RV502
Specified Value	Be sure that the 16 kHz signal level (Pin ⑪ of IC509) is equivalent to the 47 kHz signal level (Pin ⑫ of IC509).

Connection:

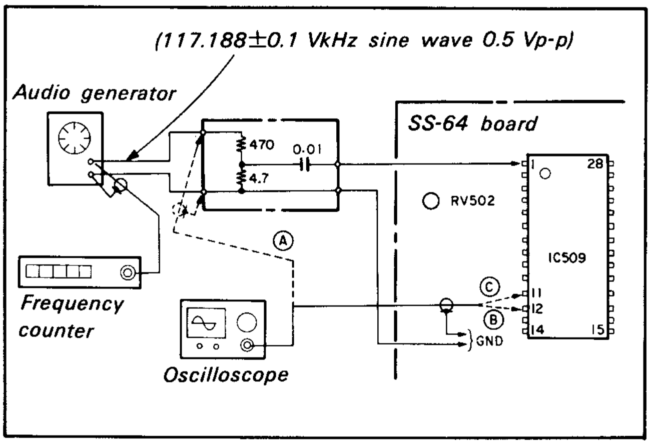

(117.188±0.1 VkHz sine wave 0.5 Vp-p)
Audio generator
470
0.01
4.7
SS-64 board
RV502
IC509
1
28
11
12
14
15
Ⓐ
Ⓑ
Ⓒ
GND
Frequency counter
Oscilloscope

Fig. 9-8.

Adjusting method:

1) Check the output level of the audio generator with an oscilloscope and adjust so that the sine wave output level becomes approximately 0.5 Vp-p. (Fig. 9-8 Ⓐ)
2) Adjust the oscillation frequency of the audio generator so that reading of the frequency counter becomes 117.188± 0.1 kHz.
3) Play back an arbitrary tape.
4) Connect an oscilloscope to Pin ⑫ of IC509 and read the 47 kHz signal level. (Approximately 2 Vp-p) (Fig. 9-8 Ⓑ)
5) Connect an oscilloscope to Pin ⑪ of IC509. (Fig. 9-8 Ⓒ)
6) Adjust with RV502 so that the 16 kHz signal level becomes equivalent to the 47 kHz signal level.

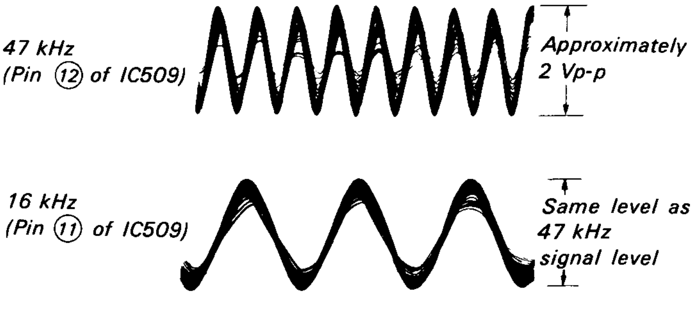


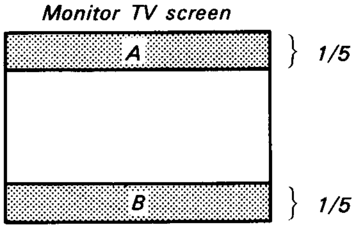
Fig. 9-9.

9-3-7. Playback Pause Adjustment (TS-55 Board)

Mode	Playback pause
Signal	A tape onto which colour bar signal has been video-recorded by itself in LP mode.
Measurement Point	Confirm with monitor TV screen picture
Measuring Instrument	
Adjusting Element	RV508
Specified Value	Be sure that there is no noise on the monitor TV screen except for the upper and lower 1/5 sections. (See Fig. 9-10)

Adjusting method:

1) Set to playback mode, and set to playback pause mode when the playback image is stabilized.
2) Be sure that there is no noise on the monitor TV screen except for the upper and lower 1/5 sections. (See Fig. 9-10)
3) When the specified value is not satisfied, repeat 1) and 2) by turning RV508.



Specification: Noise should not be appear in parts other than part A or B.

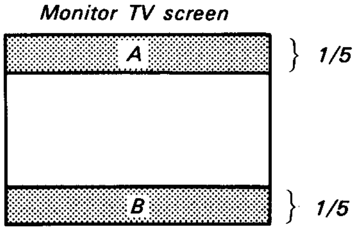
Fig. 9-10.

9-3-8. Slow Adjustment (TS-55 Board)

Mode	1/30 Slow playback
Signal	A tape onto which colour bar signal has been video-recorded by itself in LP mode.
Measurement Point	Confirm with monitor TV screen picture
Measuring Instrument	
Adjusting Element	RV504
Specified Value	Be sure that there is no noise on the monitor TV screen except for the upper and lower 1/5 sections. (See Fig. 9-11)

Adjusting method:

1) Set to playback pause mode.
2) Press the FRAME button (S312 on the SK-12 board) continuously and set to 1/30 slow playback mode.
3) Adjust with RV504 so that noise on the monitor screen is hidden into its upper and lower sections.



Specification: Noise should not be appear in parts other than part A or B.

Fig. 9-11.

9-4. VIDEO BLOCK ADJUSTMENT

The adjustment of the video system should in principle be followed the undermentioned adjustment procedure.
The colour video signal supplied from the pattern generator is utilized as the video input signal of the video system adjustment in recording mode. Make sure to check that the SYNC signal and colour burst signal are matched with those in the set-up of during the adjustment of as shown in Fig. 9-2.

[Adjustment procedure]

1) Playback frequency characteristics adjustment
2) Flying erase check
3) Crystal oscillator f_0 adjustment
4) Y/C separation adjustment
5) Y comb type filter adjustment
6) SYNC AGC adjustment
7) VIDEO OUT level adjustment
8) PB Y level adjustment
9) Y FM carrier frequency adjustment
10) Y FM deviation adjustment
11) AC clipping adjustment
12) $375f_H$ VCO adjustment
13) Chroma emphasis f_0 adjustment
14) Carrier balance adjustment
15) GCA adjustment
16) f_H VCO adjustment
17) REC Y recording current adjustment
18) REC C recording current adjustment
19) REC AFM recording current adjustment
20) REC ATF recording current adjustment

9-4-1. Playback Frequency Characteristics Adjustment (RP-34/RP-40 Boards)

The adjusting element of CH2 is shown in parentheses [ ].

Mode	Playback
Signal	Alignment tape: For frequency characteristics adjustment (WR5-2C)
Measurement Point	Pin ④ [Pin ③] of CN483 on RP-40 board External trigger: Pin ② of CN483 Trigger slope: + [−]
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 [RV004] on RP-34 board
Specified Value	From 3.58 MHz to 7 MHz is almost a straight line.

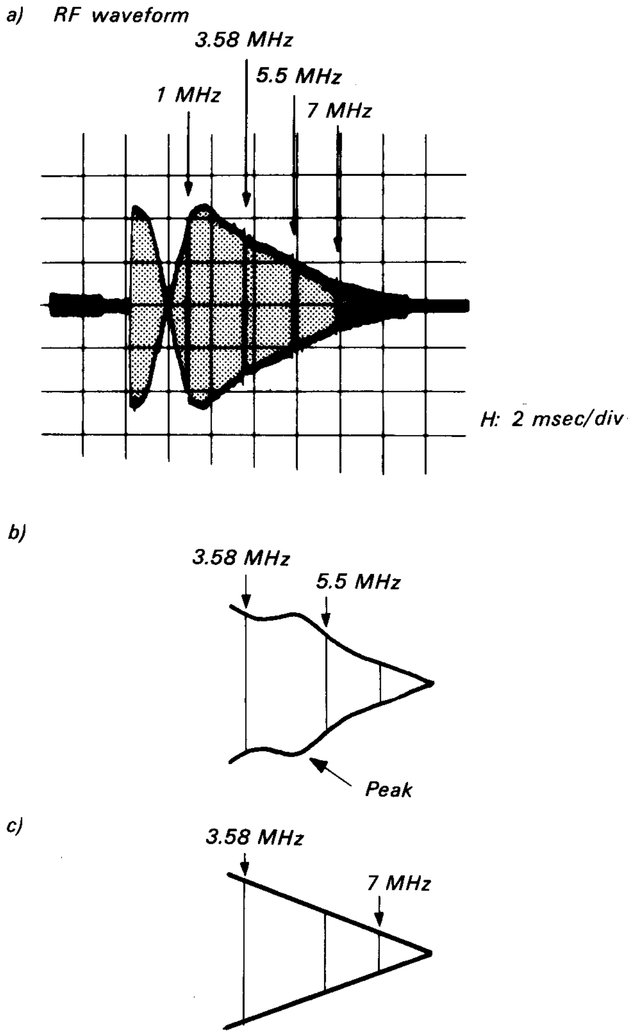


Fig. 9-12. Playback frequency characteristics adjustment

Adjusting method

1) Adjust with RV003 [RV004] on the RP-34 board so that peak appears in the envelope of the RF waveform. (See Fig. 9-12. b))
2) Adjust with RV003 [RV004] on the RP-34 board so that the peak of the RF waveform envelope becomes small and the waveform from 3.58 MHz to 7 MHz section becomes almost a straight line. (See Fig. 9-12. c))
   At this point, be sure to confirm that the level difference ratio between 3.58 MHz and 5.5 MHz is approximately 4 : 3 [4 : 3].
3) Perform self recording and be sure to confirm that there are no occurrence of black noise and white noise due to over modulation.

9-4-2. Flying Erase Check (RP-40 Board)

Mode	REC
Signal	Arbitrary
Measurement Point	Pin ① of CN481 (FE(X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: Over 7 MHz Voltage: Over 8 Vp-p

Note: Be sure to use MP type tape (Pin ⑥ of W202 should be "L").

Checking method:

1) Make sure that the oscillation frequency is over 7 MHz and the oscillation voltage is over 8 Vp-p.

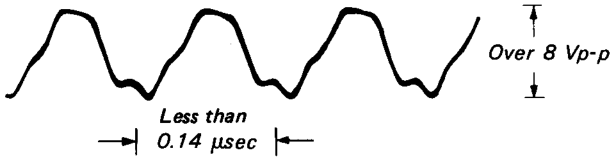


Fig. 9-13.

9-4-3. Crystal Oscillator fo Adjustment (VC-11/VI-22 Boards)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3CSP)
Measurement Point	Pin (55) on VC-11 board
Measuring Instrument	Frequency counter
Adjusting Element	CV001 on VC-11 board
Specified Value	4433619±50 Hz

Note: Connect the frequency counter through a buffer of high impedance (approximately 10 MΩ) and low capacitance (less than 10 pF)

Adjusting method:

1) Adjust with CV001 on the VC-11 board so that it becomes 4433619±50 Hz.

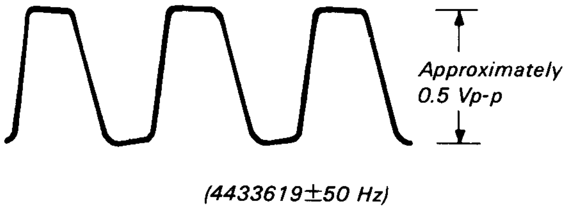


Fig. 9-14. Crystal oscillator fo adjustment

9-4-4. Chroma Comb Filter Adjustment (VD-6/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑳ on VD-6 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 on VD-6 board and LV201 on VI-22 board
Specified Value	Minimum residual chroma component

Connection:

1) Connect Q243 base to GND with a jumper wire.

Adjusting method:

1) Adjust with RV002 on the VD-6 board and LV201 on the VI-22 board alternately so that the residual chroma component becomes minimum.

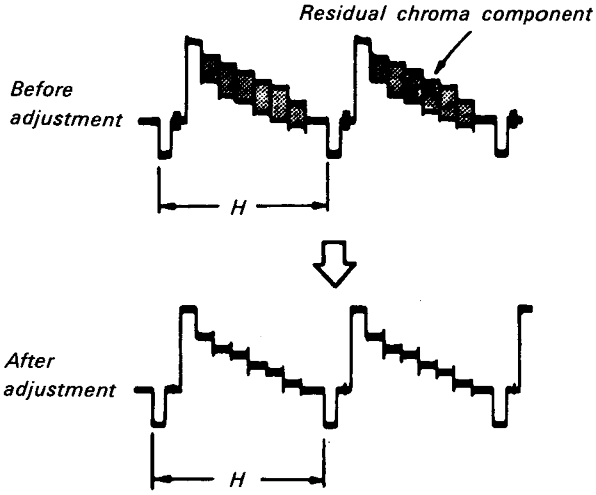


Fig. 9-15. Chroma comb filter adjustment

9-4-5. Y Comb Type Filter Adjustment (VD-6/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑩ on VD-6 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV203 on VI-22 board
Specified Value	The amplitude between the yellow lever center and the pedestal is 50±25 mVp-p.

Note: Be sure to connect a 22 kΩ of resistor in series between Pin ⑩ on the VD-6 board and 10 : 1 probe.

Adjusting method:

1) Adjust with RV203 on the VI-22 board so that the amplitude between the yellow level center and pedestal becomes 50±25 mVp-p.
2) While playing back a tape in which dropouts are recorded, be sure to confirm that these dropouts are not discernible. In the event the dropouts become discernible, adjust with RV203 so that they become undiscernible.

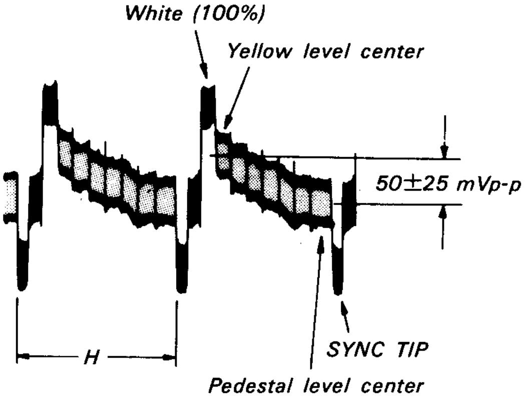


Fig. 9-16. Y comb AGC adjustment

9-4-6. SYNC AGC Adjustment (VY-9/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin (50) on VY-9 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV006 on VY-9 board
Specified Value	0.50±0.01 Vp-p

Adjusting method:

1) Adjust with RV006 on VY-9 board so that it becomes 0.50± 0.01 Vp-p.

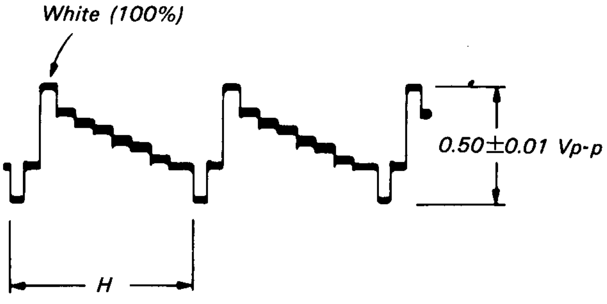


Fig. 9-17. SYNC AGC adjustment

9-4-7. VIDIO OUT Level Adjustment (VY-9/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	TP208 on VI-22 board (Pin ① of CN206: VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV005 on VY-9 board
Specified Value	$1.00^{+0.025}_{-0.05}$ Vp-p

Note: Be sure that the multiconnector has been connected to the T/T unit or AC adaptor.

Adjusting method:

1) Adjust with RV005 on the VY-9 board so that it becomes $1.00^{+0.025}_{-0.05}$ Vp-p.

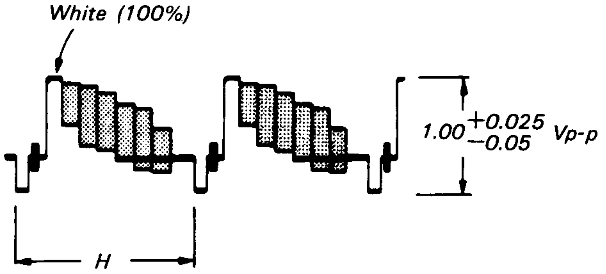


Fig. 9-18. VIDEO OUT level adjustment

9-4-8. PB Y Level Adjustment (VY-9/VI-22 Boards)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3CSP) Colour bar section
Measurement Point	TP208 on VI-22 board (Pin ① of CN206: VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 on VY-9 board
Specified Value	1.00±0.05 Vp-p

Note: 1. Be sure that the multiconnector has been connected to the T/T unit or AC adaptor.

2. Be sure that the EDIT switch (S310 on SK-12 board) is turned OFF.

Adjusting method:

1) Adjust with RV001 on the VY-9 board so that it becomes 1.00±0.05Vp-p.

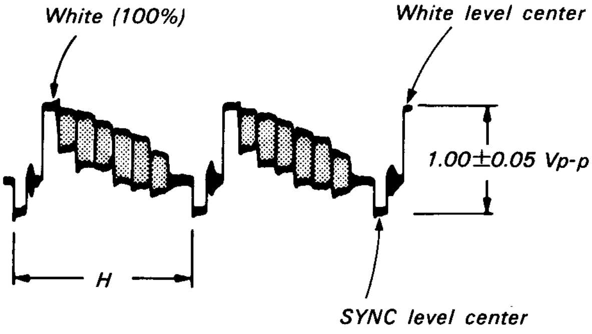


Fig. 9-19. PB Y level adjustment

9-4-9. Y FM Carrier Frequency Adjustment (VY-9/VI-22 Boards)

Mode	E-E
Signal	Non-signal
Measurement Point	Pin ㉙ on VY-9 board (REC Y RF)
Measuring Instrument	Frequency counter
Adjusting Element	RV004 on VY-9 board
Specified Value	4.20±0.03 MHz

Adjusting method:

1) Set RV003 (AC CLIP) on the VY-9 board to the mechanical center. (The slide pin of RV003 is approximately 2.7Vdc.)
2) Adjust with RV004 on the VY-9 board so that it becomes 4.20±0.03 MHz.
3) Be sure to perform the "Deviation adjustment" and "AC CLIP adjustment".

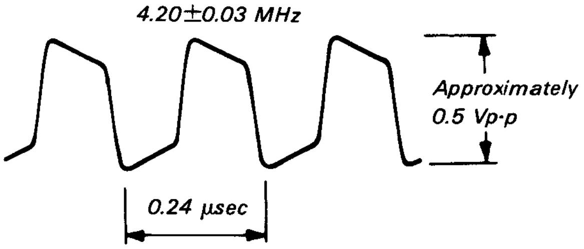


Fig. 9-20. Y FM currier frequency adjustment

9-4-10. Y FM Deviation Adjustment (VY-9/VI-22 Boards)

Mode	Recording and playback
Signal	Colour bar
Measurement Point	TP208 on VI-22 board (Pin ① of CN206: VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 on VY-9 board
Specified Value	Playback level: 1.00±0.05 Vp-p

Note: 1. Be sure that the "VIDEO OUT level adjustment", "PB Y level adjustment" and "Y FM carrier frequency adjustment" have been completed.

2. Be sure the multiconnector is connected to the T/T unit or AC adaptor.
3. Be sure the EDIT switch (S310 on the SK-12 board) is turned OFF.

Adjusting method:

1) Record the colour bar signal.
2) Play back the recorded section.
3) Be sure to check the playback output level.
   Specified value: 1.00±0.05 Vp-p
4) When the specified value is not satisfied, repeat 1) to 3) after turning RV002 on the VY-9 board in the following manner.

	Turning direction of RV002
When larger than the specified value	Clockwise (↻)
When smaller than the specified value	Counterclockwise (↺)

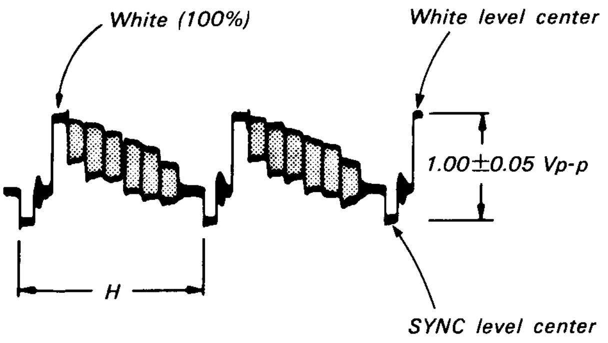


Fig. 9-21. Y FM deviation adjustment

9-4-11. AC Clip Adjustment (VY-9/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin (35) on VY-9 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 on VY-9 board
Specified Value	240±10%

Adjusting method:

1) Adjust with RV003 on the VY-9 board so that the peak of the white 100% becomes 240±10%.

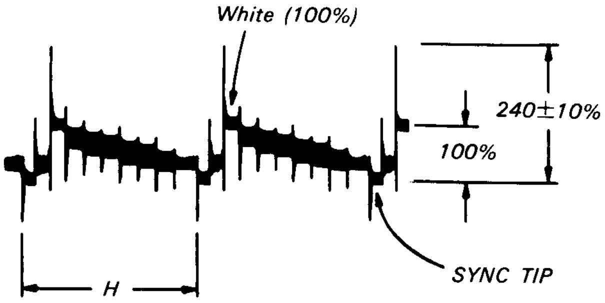


Fig. 9-22. AC clip adjustment

9-4-12. 375fH VCO Adjustment (VC-11/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin (60) on VC-11 board
Measuring Instrument	Digital voltmeter
Adjusting Element	RV002 on VC-11 board
Specified Value	3.0±0.4Vdc

Adjusting method:

1) Adjust with RV002 on the VC-11 board so that it becomes 3.0±0.4Vdc.

9-4-13. Chroma Emphasis f_0 Adjustment (VI-22 Board)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑧ on VC-11 board
Measuring Instrument	Oscilloscope
Adjusting Element	FL203 on VI-22 board
Specified Value	Be sure to confirm that the f_0 component is minimum and zero cross appears between green and magenta.

Connection:

1) Connect Pin ⑪ (ACC) on the VC-11 board and Pin ① (PB VI RF) of the W202 with a 1 kΩ resistor.

Adjusting method:

1) Adjust with FL203 on the VI-22 board so that the amplitude of the flat cyan section of the chroma signal becomes minimum.
   At this point, be sure to confirm that the zero cross appears between the green and magenta.

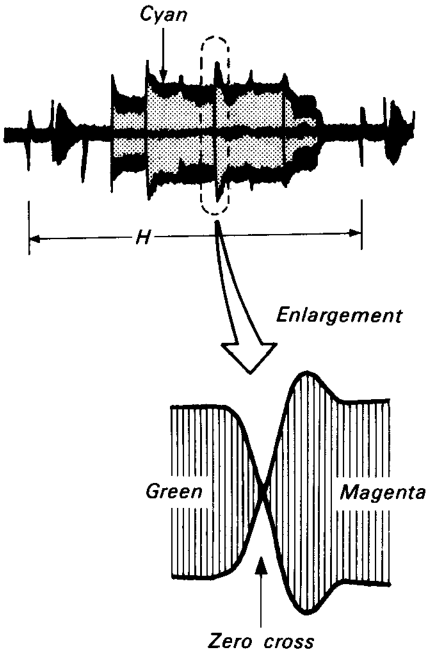


Fig. 9-23. Chroma emphasis f_0 adjustment

9-4-14. Carrier Balance Adjustment (VC-11/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin (64) on VC-11 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 on VC-11 board
Specified Value	Minimize 5.17 MHz signal component

Adjusting method:

1) Adjust with RV001 on the VC-11 board so that the 5.17 MHz signal component becomes minimum.

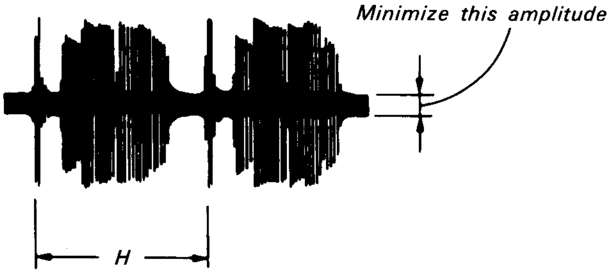


Fig. 9-24. Carrier balance adjustment

9-4-15. GCA Adjustment (VC-11/VI-22 Boards)

Mode	Playback
Signal	Arbitrary tape
Measurement Point	Pin (54) on VC-11 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 on VC-11 board
Specified Value	460±30 mVp-p

Adjusting method:

1) Adjust with RV003 on the VC-11 board so that it becomes 460±30 mVp-p.
2) Set to either the STILL, CUE, OR REVIEW mode, and be sure to confirm that the thickness of the colour does not differ from that of the playback mode. If necessary, adjust with RV003. (Be sure to play back a tape of LP mode.)

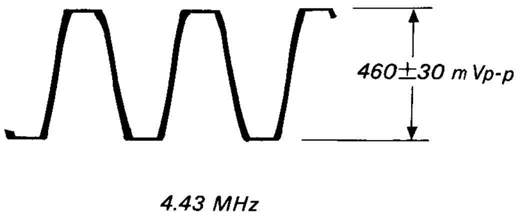


Fig. 9-25.

9-4-16. f_H VCO Adjustment (VC-11/VI-22 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	CH1: Pin (53) of VC-11 board CH2: TP208 (Pin ① of CN206) on VI-22 board (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV004 on VI-11 board
Specified Value	14.0±0.2 µsec

Adjusting method:

1) Adjust RV004 on the VC-11 board so that the T_R of CH1 is 14.0±0.2 µsec.
2) Confirm that the H (time) of CH1 and CH2 is stable.

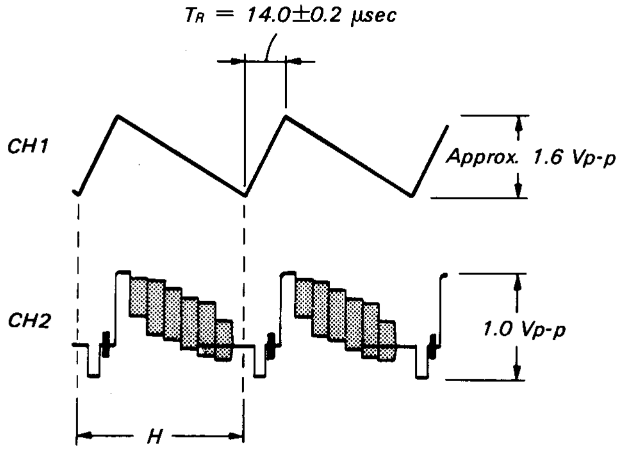

T_R = 14.0±0.2 µsec
CH1
Approx. 1.6 Vp-p
CH2
1.0 Vp-p
H

Fig. 9-26. f_H VCO adjustment

9-4-17. REC Y Recording Current Adjustment (RP-34/RP-40 Boards)

Mode	REC
Signal	Non-signal
Measurement Point	TP482 on RP-40 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 (REC VI) on RP-34 board
Specified Value	200 mVp-p

Note: Be sure to always perform the adjustment of the respective recording currents of the REC C, REC AFM, and REC ATF after the REC Y recording current adjustment has been completed.

Adjusting method:

1) Adjust with RV001 of the RP-34 board so that it becomes 200 mVp-p.

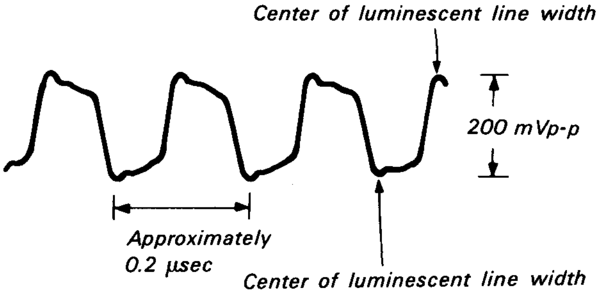

Center of luminescent line width
200 mVp-p
Approximately
0.2 µsec
Center of luminescent line width

Fig. 9-27. REC Y recording current adjustment

9-4-18. REC C Recording Current Adjustment (RP-40, VI-22 Boards)

Mode	REC
Signal	Colour bar
Measurement Point	TP482 on RP-40 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV201 on VI-22 board
Specified Value	38 mVp-p

Note: 1. Be sure to always perform the adjustment of the respective recording currents of the REC AFM and REC ATF after the REC C recording current adjustment has been completed.

2. Be sure to use the MP type tape. (Be sure Pin ③ of IC201 on the VI-22 board is at "L".)

3. Be sure to eliminate the solder on Pin ⑦ (FE ON) of the connector W202 on the RP-40 board and stop the flying erase oscillation.

Connection:

1) Connect the following two points on the VI-22 board with a jumper.
   1. Pin ㉙ on the VY-9 board (REC Y RF) and GND
   2. TP219 (Q220 Ⓔ : REC ATF RF) and GND
2) Connect the following one point on the AU-25 board with a jumper.
   1. The connector (W204) pin side of RV403 (REC AFM ADJ) and GND (TP409).

Adjusting method:

1) Adjust with RV201 on the VI-22 board so that it becomes 38 mVp-p.

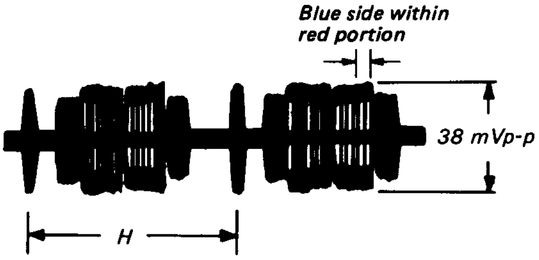


Fig. 9-28. REC C LEVEL Adjustment

9-4-19. REC AFM Recording Current Adjustment (RP-40, VI-22 Boards)

Mode	REC (LP mode)
Signal	Non-signal
Measurement Point	TP482 on RP-40 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV403 on AU-25 board
Specified Value	7.5 mVp-p

Note: 1. Be sure to use the MP type tape. (Be sure Pin ③ of IC201 on the VI-22 board is at "L".)

2. When the TP482 signal level is too small to read, do not use the 10 : 1 probe, but connect it directly a resistor of 100Ω as shown in Fig. below.

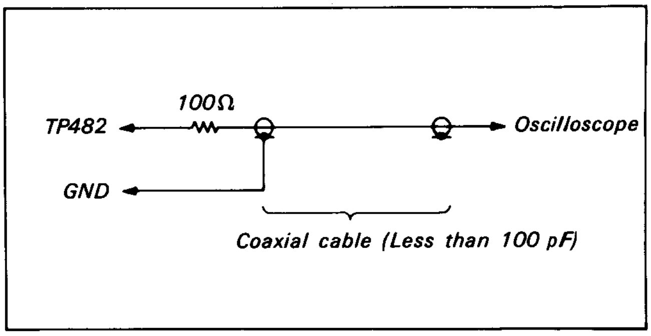


Fig. 9-29.

3. Be sure to eliminate the solder on Pin ⑦ (FE ON) of the connector W202 on the RP-40 board and stop the flying erase oscillation.

Connection:

1) Connect the following two points on the VI-22 board with a jumper.
   1. Pin ㉙ (REC Y RF) on the VY-9 board and GND.
   2. TP219 (the pin of Q220 side of RV202 (REC ATF ADJ)) and GND.

Adjusting method:

1) Adjust with RV403 on the AU-25 board so that it becomes 7.5 mVp-p.

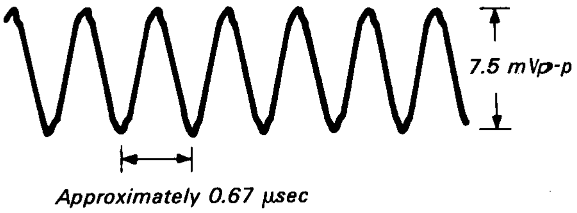


Fig. 9-30. AFM recording current adjustment

9-4-20. REC ATF Recording Current Adjustment (RP-40, VI-22 Boards)

Mode	REC (LP mode)
Signal	Non-signal
Measurement Point	TP482 on RP-40 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202 on VI-22 board
Specified Value	6.7mVp-p

Note: 1. Be sure to use the MP type tape. (Be sure Pin ③ of IC201 on the VI-22 board is at "L".)

2. When the TP482 signal level is too small to read, do not use the 10 : 1 probe, but connect it directly a resistor of 100Ω as shown in Fig. below.

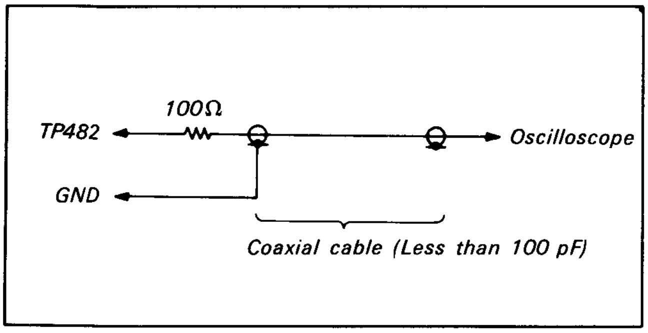

100Ω
TP482
Oscilloscope
GND
Coaxial cable (Less than 100 pF)

Fig. 9-31.

3. Be sure to eliminate the solder on Pin ⑦ (FE ON) of the connector W202 on the RP-40 board and stop the flying erase oscillation.

Connection:

1) Connect the following one point on the VI-22 board with a jumper.
Pin ㉙ (REC Y RF) on the VY-9 board and GND
2) Connect the following one point on the AU-25 board with a jumper.
The pin of connector (W204) side of RV403 (REC AFM ADJ) and GND

Adjusting method

1) Adjust with RV202 on the VI-22 board so that it becomes 6.7mVp-p.

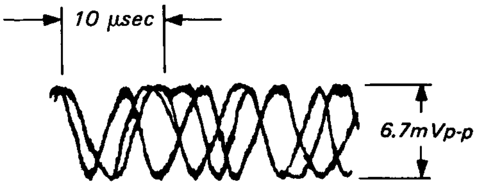

10 μsec
6.7mVp-p

Fig. 9-32. REC ATF recording current adjustment

9-5. AUDIO SYSTEM ADJUSTMENT

In addition to the video system measuring instruments, connect the audio system ones as shown in Fig. below.

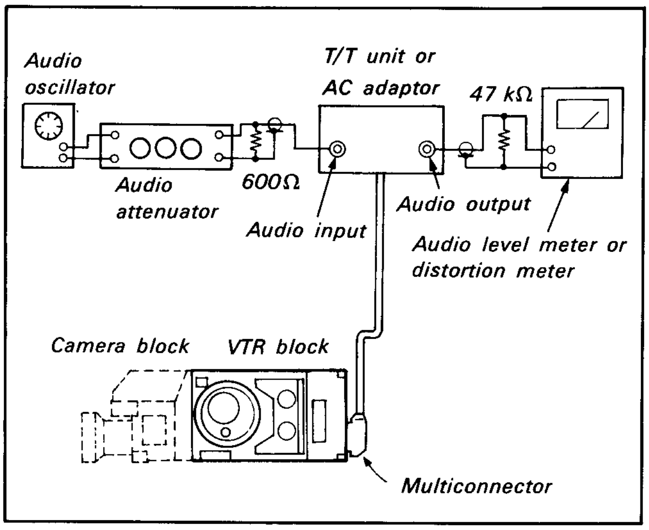

Audio oscillator
T/T unit or AC adaptor
47 kΩ
Audio attenuator
600Ω
Audio input
Audio output
Audio level meter or distortion meter
Camera block
VTR block
Multiconnector

Fig. 9-33.

9-5-1. AFM Carrier Frequency Adjustment (AU-25 Board)

Mode	REC (SP mode)
Signal	Non-signal
Measurement Point	Pin ⑭ of IC401 or RV403
Measuring Instrument	Frequency counter
Adjusting Element	RV401
Specified Value	1.500±0.002 MHz

Adjusting method:

1) Adjust with RV401 so that it becomes 1.500±0.002 MHz.

9-5-2. AFM Deviation Adjustment (AU-25 Board)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-3CSP)
Measurement Point	See Fig. 9-33
Measuring Instrument	Audio level meter
Adjusting Element	RV402
Specified Value	−6±0.2 dBs

Adjusting method:

1) Adjust with RV402 so that the audio output level becomes −6±0.2 dBs.

9-5-3. E-E Output Level Check

Mode	E-E
Signal	400 Hz, −6 dBs
Measurement Point	See Fig. 9-33.
Measuring Instrument	Audio level meter
Specified Value	−6±2 dBs

Checking method:

1) Be sure the audio output level is −6±2 dBs.

9-5-4. Overall Level Characteristics Check

Mode	Self-recording and playback
Signal	400 Hz, −6 dBs
Measurement Point	See Fig. 9-33.
Measuring Instrument	Audio level meter
Specified Value	−6±3 dBs

Checking method:

1) Record the signal.
2) Play back the recorded section.
3) Be sure the audio output level is −6±3 dBs.

9-5-5. Overall Frequency Characteristics Check

Mode	Self-recording and playback
Signal	Ⓐ 400 Hz, −20 dBs Ⓑ 30 Hz, −20 dBs Ⓒ 14 kHz, −20 dBs
Measurement Point	See Fig. 9-33.
Measuring Instrument	Audio level meter
Specified Value	When the 400 Hz playback output level is specified as 0 dB, the playback output levels of 30 Hz and 14 kHz become both 0±3 dB.

Checking method:

1) Record the signals of Ⓐ to Ⓒ in sequence.
2) Play back the recorded section.
3) Be sure that when the 400 Hz playback output level is specified as 0 dB, the playback output levels of 30 Hz and 14 kHz become both 0±3 dB.

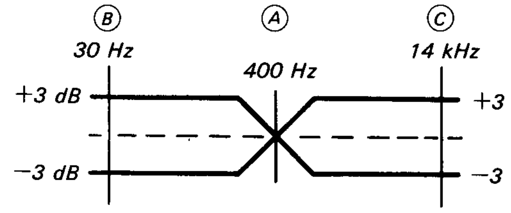


Fig. 9-34. AFM overall frequency characteristics

9-5-6. Overall Distortion Check

Mode	Self-recording and playback
Signal	400 Hz, −6 dBs
Measurement Point	See Fig. 9-33
Measuring Instrument	Distortion meter
Specified Value	Less than 0.5%*¹

Checking method:

1) Record the signal.
2) Play back the recorded section.
3) Be sure the distortion is less than 0.5%*¹.

*1: The value when a distortion measuring filter (Fig. 9-35) is used and that when the filter is not used is less than 1.0%.

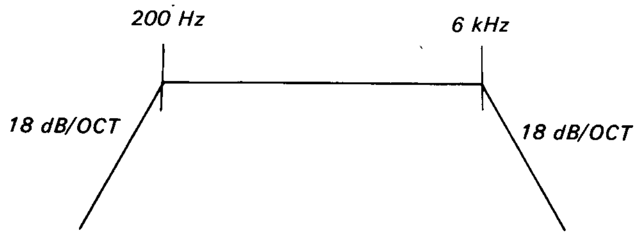


Fig. 9-35. Distortion measuring filter

9-5-7. Overall Noise Level Check

Mode	Self-recording and playback
Signal	Non-signal (Short-circuit Pin ㉒ (AUDIO IN) of multiconnector (SC-6 board) and Pin ⑳ (GND) with a jumper.)
Measurement Point	See Fig. 9-33.
Measuring Instrument	Audio level meter
Specified Value	Less than −66 dBs*²

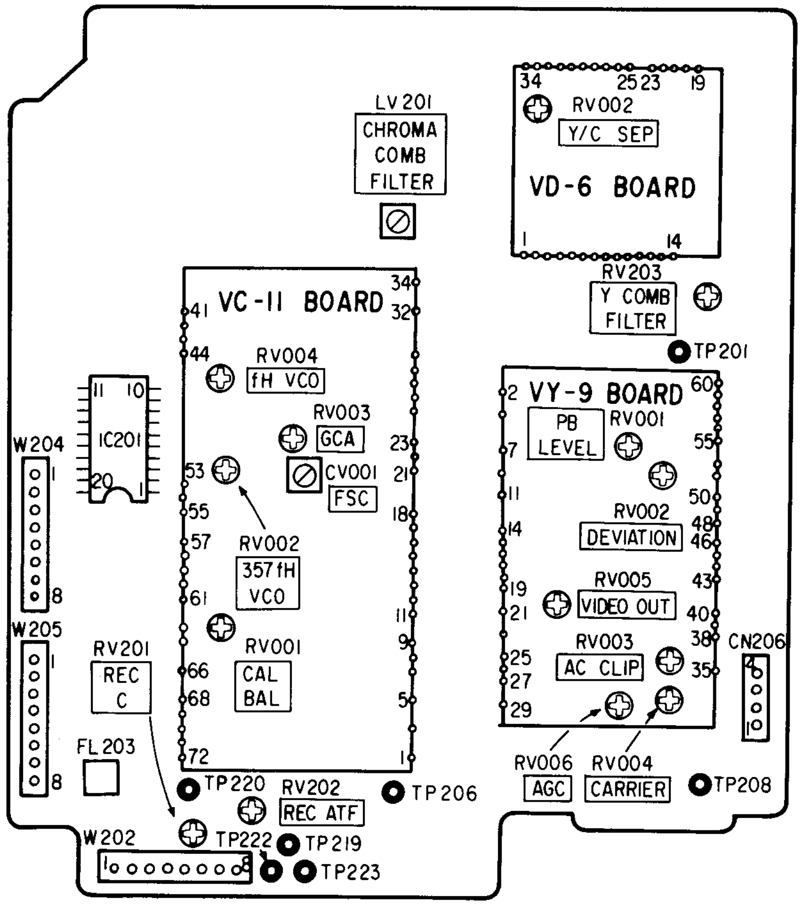
Checking method:

1) Record the signal.
2) Play back the recorded section.
3) Be sure the noise level is less than −66 dBs*².

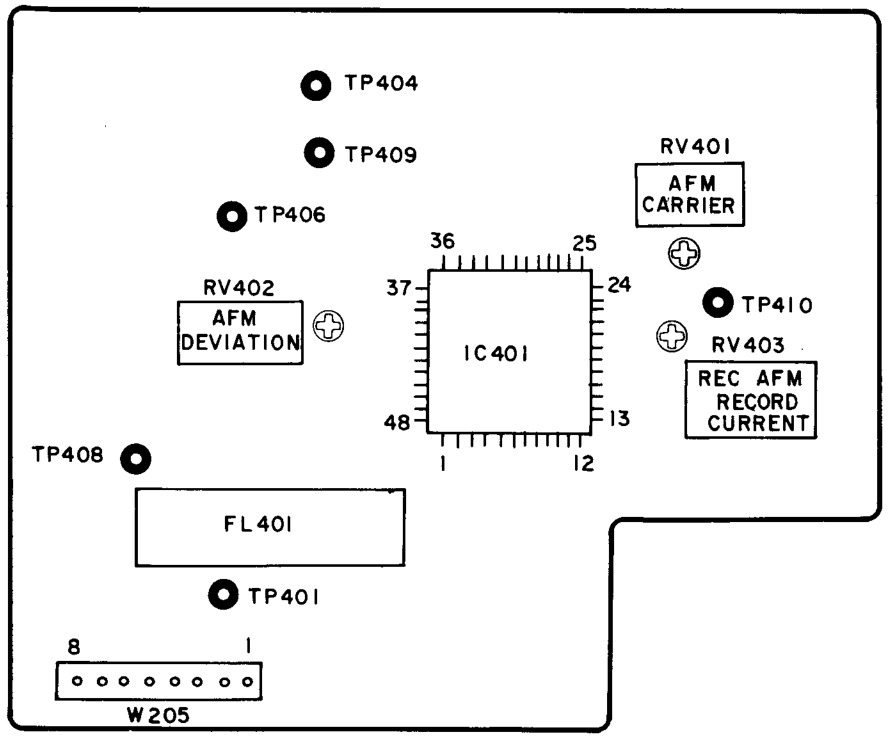
*2: The value when an IHF-A listening sensitivity correction filter is used.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

VI-22 BOARD (COMPONENT SIDE)


LV201
CHROMA COMB FILTER
VD-6 BOARD
34
25
23
19
1
14
RV002
Y/C SEP
RV203
Y COMB FILTER
TP201
VC-II BOARD
41
34
32
44
RV004
fH VCO
RV003
GCA
CV001
FSC
53
55
57
61
66
68
72
23
21
18
11
9
5
1
RV002
3.57 fH VCO
RV001
CAL BAL
IC201
11
10
20
1
W204
1
8
W205
1
8
RV201
REC C
FL203
VY-9 BOARD
2
60
PB LEVEL
RV001
7
55
11
50
14
RV002
DEVIATION
48
46
19
21
RV005
VIDEO OUT
43
40
25
27
29
RV003
AC CLIP
38
35
CN206
1
4
RV006
AGC
RV004
CARRIER
TP208
TP220
RV202
REC ATF
TP206
W202
1
8
TP222
TP219
TP223

AU-25 BOARD (COMPONENT SIDE)


TP404
TP409
TP406
RV401
AFM CARRIER
36
25
37
24
RV402
AFM DEVIATION
IC401
TP410
RV403
REC AFM RECORD CURRENT
48
13
1
12
TP408
FL401
TP401
8
1
W205

layback

Fig. 9-35) is
than 1.0%.

3 dB/OCT

er

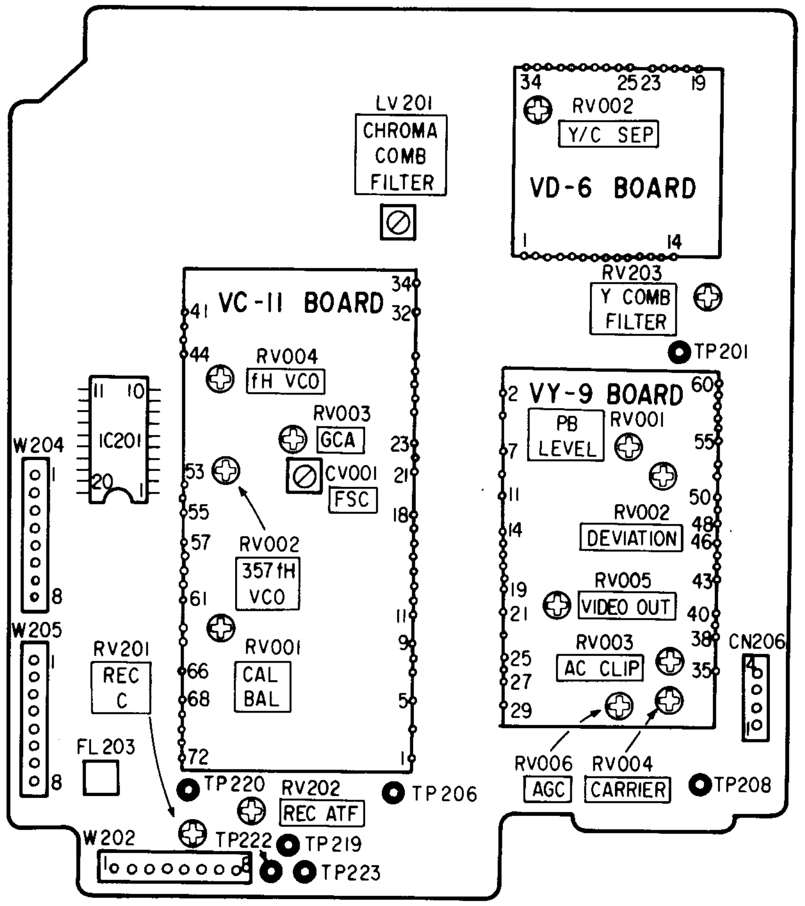
layback

iconnec-
and Pin
jumper.

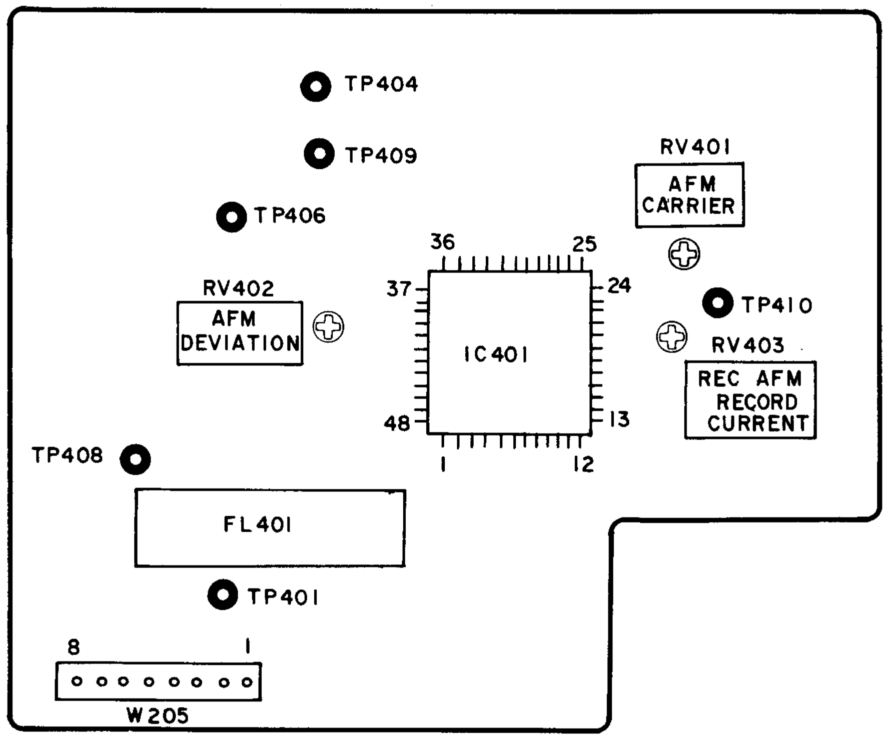
correction

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

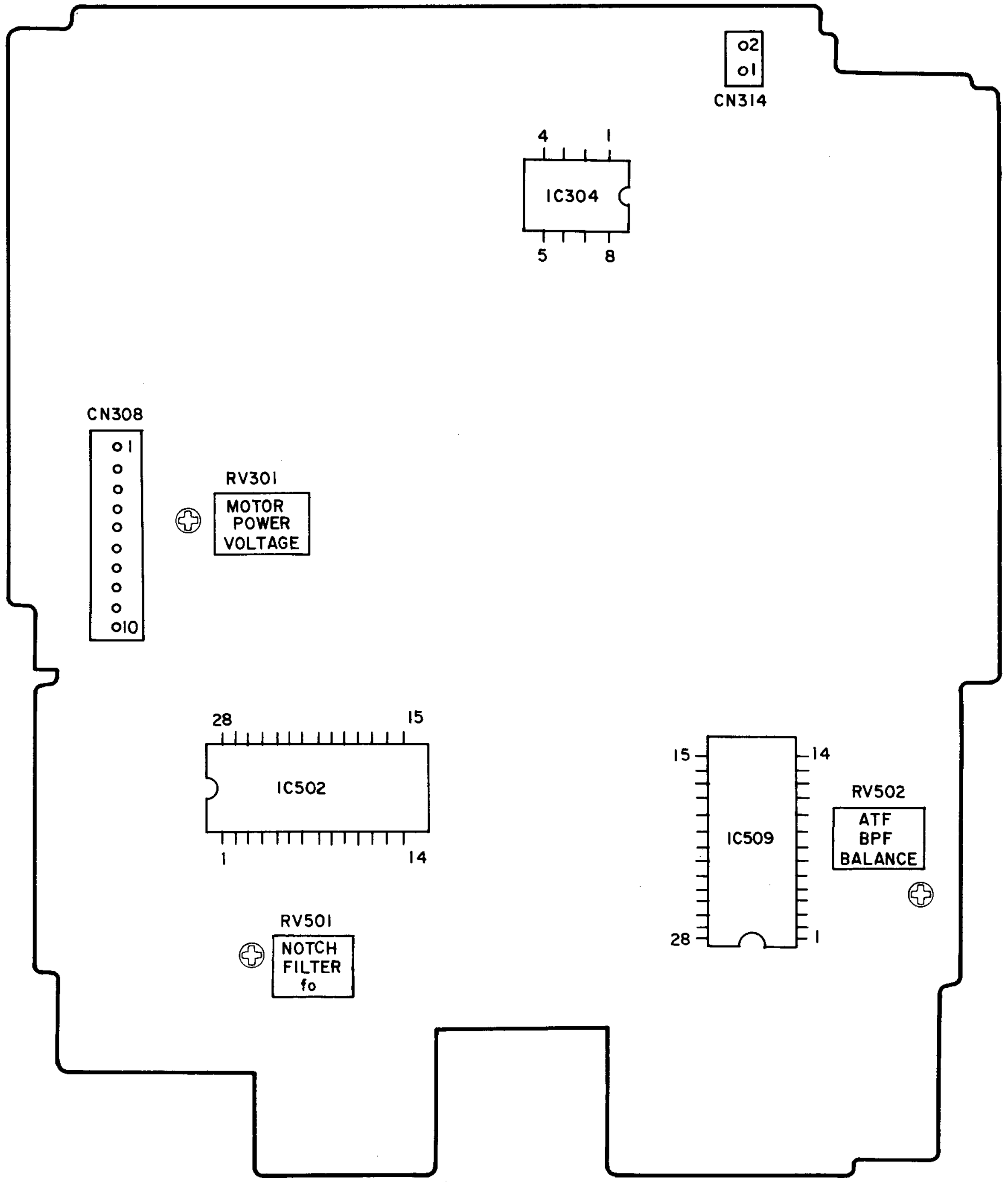
VI-22 BOARD (COMPONENT SIDE)


LV201
CHROMA COMB FILTER
VD-6 BOARD
34 25 23 19
RV002
Y/C SEP
1 14
RV203
Y COMB FILTER
TP201
VC-11 BOARD
41 34 32
44 RV004 fH VCO
RV003 GCA
23 21 18
53 CV001 FSC
55 57 RV002 3571fH VCO
61 11 9
RV001 CAL BAL
66 68 5
72 1
11 10 IC201 20 1
W204
1 8
W205
1 8
RV201 REC C
FL203
VY-9 BOARD
2 60
PB LEVEL RV001
7 55
11 50
14 RV002 DEVIATION 48 46
19 RV005 VIDEO OUT 43
21 40
25 RV003 AC CLIP 38
27 35
29
CN206
RV006 AGC
RV004 CARRIER
TP208
TP220 RV202 REC ATF
TP206
W202
TP222 TP219
TP223

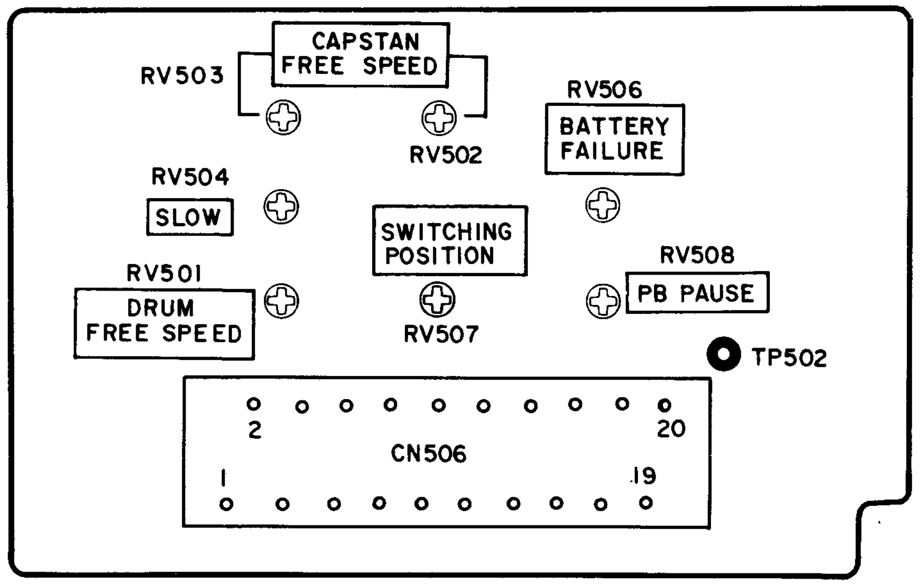
AU-25 BOARD (COMPONENT SIDE)


TP404
TP409
TP406
RV401
AFM CARRIER
36 25
37 24
RV402
AFM DEVIATION
IC401
TP410
RV403
REC AFM RECORD CURRENT
48 13
1 12
TP408
FL401
TP401
8 1
W205

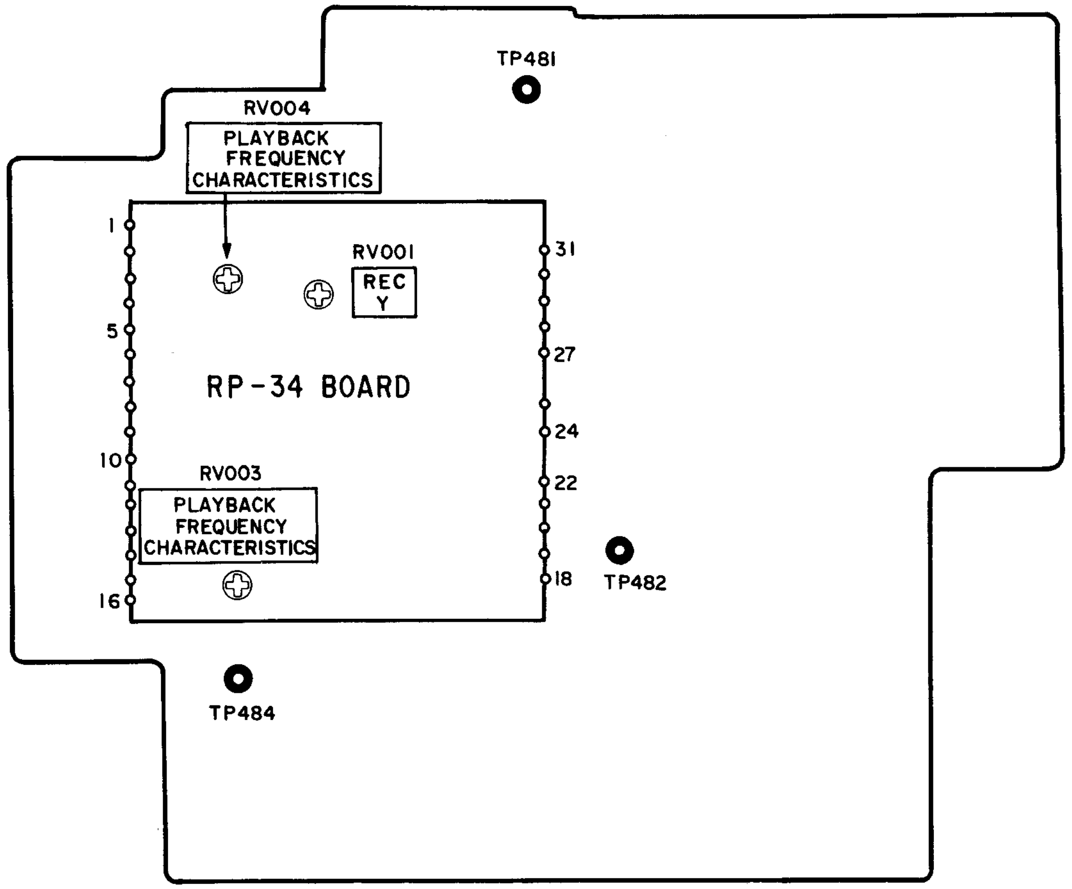
SS-64 BOARD (COMPONENT SIDE)


o2
o1
CN314
4 1
IC304
5 8
CN308
o1
o10
RV301
MOTOR POWER VOLTAGE
28 15
IC502
1 14
15 14
IC509
28 1
RV502
ATF BPF BALANCE
RV501
NOTCH FILTER fo

TS-55 BOARD (COMPONENT SIDE)


CAPSTAN FREE SPEED
RV503
RV502
RV506
BATTERY FAILURE
RV504
SLOW
SWITCHING POSITION
RV508
RV501
DRUM FREE SPEED
PB PAUSE
RV507
TP502
2
20
CN506
1
19

RP-40 BOARD (COMPONENT SIDE)


TP481
RV004
PLAYBACK FREQUENCY CHARACTERISTICS
1
31
RV001
REC Y
5
27
RP-34 BOARD
24
10
RV003
22
PLAYBACK FREQUENCY CHARACTERISTICS
18
TP482
16
TP484

CCD-V100E

SONY®

SERVICE MANUAL

AEP Model
UK Model
Australian Model
E Model

December, 1986

SUPPLEMENT-1

Subject: Partial change of parts of AEP Model

- **File this supplement with the service manual.**
- **In the AEP Model, parts to sets after Serial No. 400001 have been changed as follows:**

Page 215

No.	Part No.	Description	Remark
14	*3-713-961-01	LABEL, MODEL NUMBER (FTZ object in AEP MODEL)	
	*3-713-960-01	LABEL, MODEL NUMBER (AEP MODEL is beyond the object of the FTZ)	

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CCD-V100E

SONY®
SERVICE MANUAL

AEP Model
UK Model
Australian Model
E Model

January, 1987

SUPPLEMENT-2

Subject: Camera auto focus system adjustment

- **File this supplement with the service manual.**

1. AUTO FOCUS SYSTEM ADJUSTMENT

Place the Sign Chart 2m (or 1m) away from the lens base plane as shown in Fig. 1-1 and perform adjustment. Set lighting brightness to such a value (120 lux) that the "LOW LIGHT" indication is displayed within EVF.

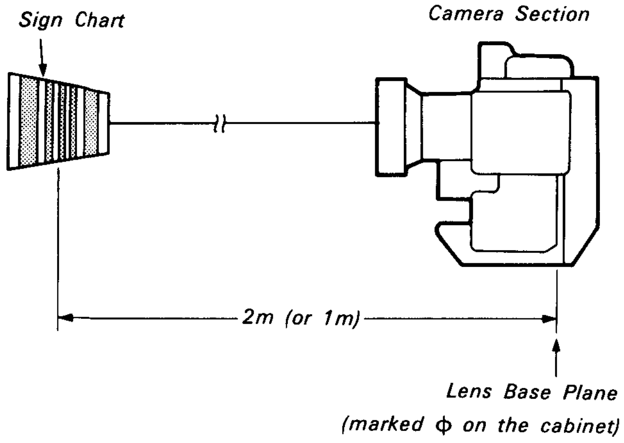

Sign Chart
Camera Section
2m (or 1m)
Lens Base Plane
(marked ф on the cabinet)

Fig. 1-1.

1-1. AD CONVERTER REFERENCE VOLTAGE ADJUSTMENT (AF-23 BOARD)

Object	Arbitrary
Measurement Point	Both terminals of RV802 (See Fig. 1-2)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV802
Specified Value	2.04±0.05Vdc

Adjusting method:

1) Set the FOCUS switch (S671 on CG-1 board) to AUTO position.
2) Adjust to 2.04±0.05Vdc with RV802.

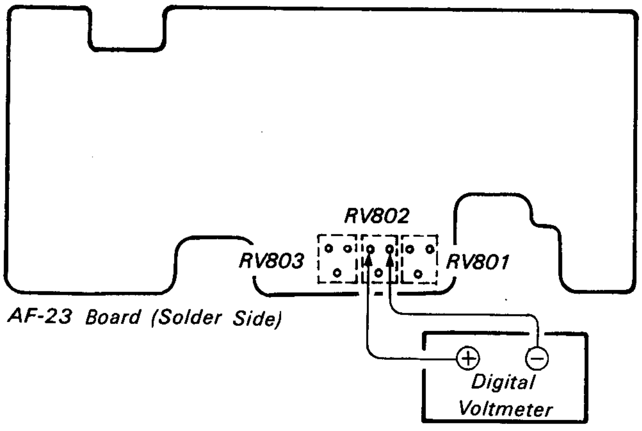

RV802
RV803
RV801
AF-23 Board (Solder Side)
+
−
Digital Voltmeter

Fig. 1-2.

1-2. $\overline{X_P}$ ADJUSTMENT (AF-23 board)

Object	Sign Chart (2.0m in front of lens base plane (ф mark))
Measurement Point	CH1: Pin ⑪ of IC802 CH2: Pin ⑭ of IC802 See Fig. 1-3
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV801
Specified Value	Pulse should be output alternately from CH1 and CH2

Connection:

1) Oscilloscope

AF-23 Board (Solder Side)

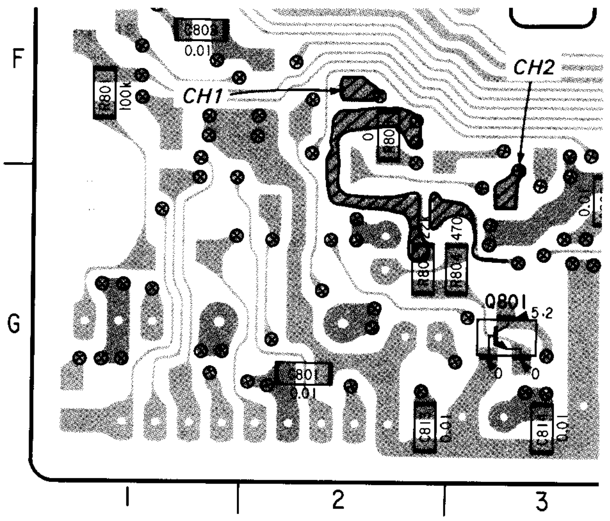

F
G
CH1
CH2
Q801
1
2
3

Fig. 1-3.

2) Remove CG-1 board in Fig. 1-4 fixing screw and three claws, then pull CG-1 board down.
   Contact Pin ㊶ of IC802 to GND (at the spot specified in Fig. 1-5) and set to ALIGNMENT mode.

Note: If the FOCUS switch is set to manual after adjustment, it returns to original state.

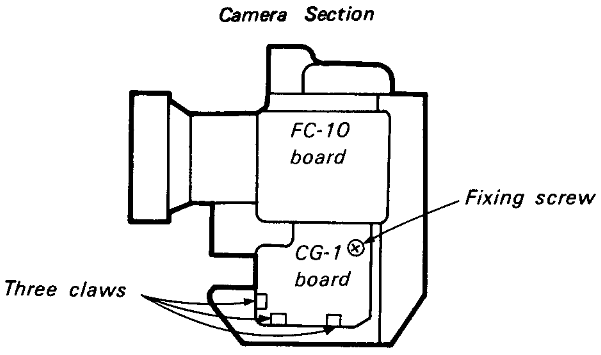

Camera Section
FC-10 board
Fixing screw
CG-1 board
Three claws

Fig. 1-4.

AF-23 Board (Component Side)

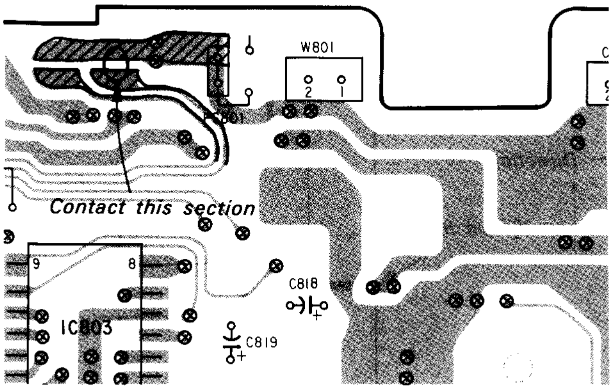

W801
Contact this section
IC803
C818
C819

Fig. 1-5.

Setting of switches:

1. FOCUS switch (S671 of CG-1 board)..... AUTO
2. Zoom lever..... 40 mm (approx.)

Adjusting method:

1) Turn the focus ring and set focus index to the center of "2".
2) Adjust with RV801 so that pulses are output alternately from CH1 and CH2.

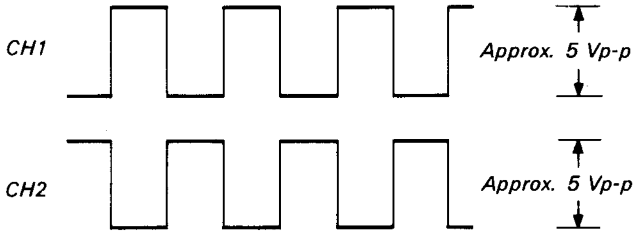


Fig. 1-6.

1-3. Z-AXIS ADJUSTMENT

Object	Sign Chart (2.0m in front of lens base plane (ф mark))
Specified Value	TELE side: ±1m WIDE side: $^{+10}_{-7}$ mm

Adjusting method:

1) Set the FOCUS switch (S671 on CG-1 board) to AUTO position.
2) Set the zoom lever to TELE end position (72 mm).
3) Loosen Z-frame fixing screws ❶ (Fig. 1-8).
4) Remove the adhesive.
5) Move the Z-frame to and fro (A↔B direction) until the focus ring stops at the center of index "2" (Fig. 1-7, 8).
6) Tighten Z-frame fixing screws ❶ (Fig. 1-8).
7) Set the zoom lever to the WIDE end position (12 mm).
8) Turn focus ring to the 1.3m position and release the hand from it.
9) Confirm that focus ring stop position (index position) is within $^{+10}_{-7}$ mm from the center of "2" (Fig. 1-7).
10) Turn the focus ring to ∞ position and release the hand from it.
11) Confirm that focus ring stop position is within the above range.
12) If the above standards are not satisfied, repeat steps 2) to 11).

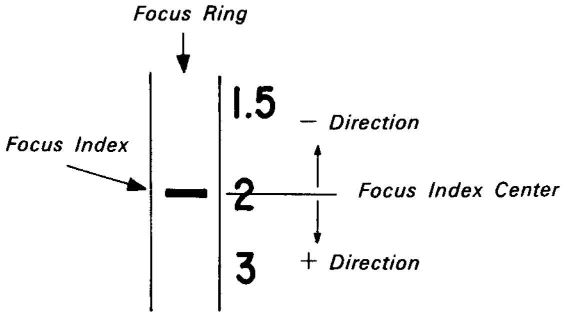

Focus Ring
Focus Index
1.5
− Direction
2
Focus Index Center
3
+ Direction

Fig. 1-7.

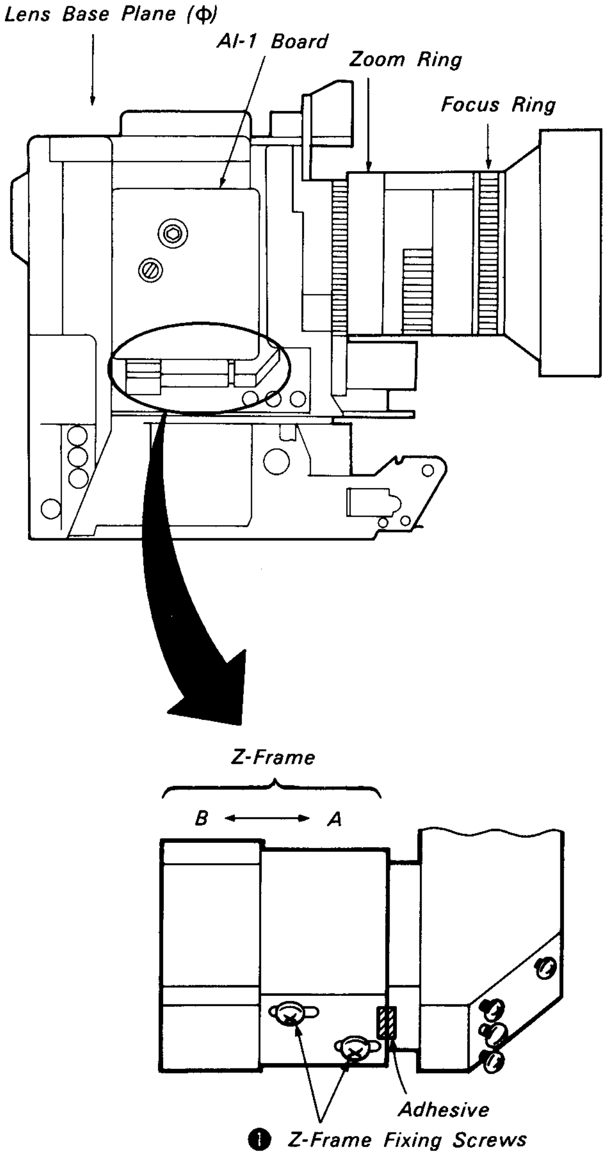

Lens Base Plane (ф)
AI-1 Board
Zoom Ring
Focus Ring
Z-Frame
B
A
Adhesive
❶ Z-Frame Fixing Screws

Fig. 1-8.

1-4. MOTOR VOLTAGE ADJUSTMENT (AF-23 BOARD)

Object	Sign Chart (1.0m in front of lens base plane (ϕ mark).)
Measuring Instrument	Stopwatch
Adjusting Element	RV803
Specified Value	2.5±0.5 sec

Setting of switches:

1. FOCUS switch (S671 on CG-1 board)..... AUTO
2. Zoom lever..... 20 mm (approx.)

Adjusting method:

1) Set focus ring to infinity position (∞).
2) Measure time from the moment you release the focus ring until it turns back to the short-distance end position (1.3m).
3) If the above standards are not satisfied, repeat steps 1) and 2) after turning RV803.

1-5. AUTO FOCUS CHECK

Object	Sign Chart (2.0m in front of lens base plane (ϕ mark)
Specified Value	TELE side: Within ±1.0 mm against exact (manual) focus setting WIDE side: Within $^{+20}_{-10}$ mm against exact (manual) focus setting

Adjusting method:

1) Set the FOCUS switch (S671 on CG-1 board) to MANUAL position.
2) Set the zoom lever to TELE end position (72 mm).
3) Adjust focus by turning the focus ring. Confirm that the focus index position is within the range shown in Fig. 1-9. Also, memorize the focus index position (If this condition cannot be attained, perform flange-back adjustment).

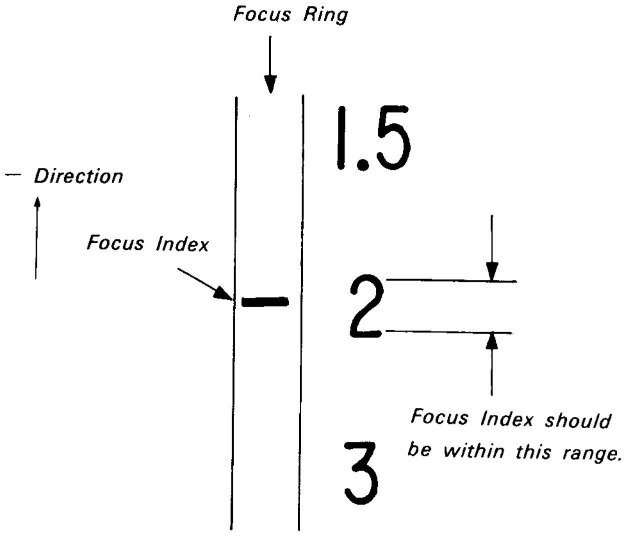


Fig. 1-9.

4) Set the FOCUS switch to AUTO position.
5) Turn the focus ring to ∞ position and release the hand from it.
6) Confirm that the focus ring stops within ±1.0 mm against the manual focus position (i.e. the focus index position memorized in step 3)).
7) Turn the focus ring to the 1.3m position and release the hand from it.
8) Confirm that the focus ring stops within ±1.0 mm against the manual focus position.
9) Fix the zoom lever at the WIDE end position (12 mm).
10) Repeat steps 5) to 7). Confirm that the focus standards at the WIDE end position is $^{+20}_{-10}$ mm against the manual focus position (i.e. the focus index position memorized in step 3)).

CCD-V100E

SONY

SERVICE MANUAL

AEP Model
UK Model
Australian Model
E Model

SUPPLEMENT-3

The Camera section, Video section, Servo/System control section, Servo/Mechanism control section, and Viewfinder section were modified for improvements. Also the end of printed wiring board numbers were changed. Consequently, the schematic diagrams and printed wiring boards were partially revised.

Contents of main modifications are as follows.

- Camera section

Camera (1)
  - ME-4 board Alterations: resistor, capacitor, diode, transistor
    Elimination: capacitor
  - CP-18 board Alterations: capacitor
    Elimination: resistor, capacitor

Camera (2)
  - AT-5 board Alteration: resistor
  - AI-1 board Alteration: resistor, capacitor
  - AW-3 board Alteration: resistor
    Elimination: D706, D708, D709
    Connection change of IC701 Pin ㊼

Camera (3)
  - FC-10 board Alteration: switch
  - CG-1 board Alteration: resistor, capacitor
    Elimination: resistor

- Video section
  - VI-22 board Alteration: resistor, capacitor
- Servo/System control section
  - SS-64 board Alteration: resistor, capacitor, inductor, IC301, IC302, Q502, Q503
    Elimination: Q335, Q336, resistor, capacitor
  - DR-36 board Alteration: resistor
  - TS-55 board Alteration: RV501
- Servo/Mechanism control section
  - SK-12 board Alteration: resistor
    Elimination: capacitor
- Viewfinder section
  - VF-7 board Alteration: resistor, capacitor

With issuing of Supplement-3, the end of numbers for the following printed wiring boards were changed from 22 to 24.
ME-4, CP-18, AT-5, AI-1, AW-3 and VF-7 boards
MOdifications on the schematic diagrams and printed wiring boards caused by changed of the ends are almost the ends 23 and 24.

The end of number for the CG-1 board were changed from 21 to 23.
The modification are almost same the ends 21 and 22.
The end of numbers for the VI-22 board were changed from 11 to 12.
The end of numbers for the SS-64, DR-36 and TS-55 boards were changed from 22 to 23.
The end of number for the SK-12 board were changed from 21 to 24. The modification are almost same the ends 21 and 22, also 23 and 24.

SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

ME-4 BOARD (Last two digits 24) CAMERA (1)

- **Parts to be replaced.**

Ref. No.	Old	New
C709	1-163-109-00 CERAMIC CHIP 47PF 5% 50V	Deletes
C777	1-163-035-00 CERAMIC CHIP 0.047MF	1-162-637-11 CERAMIC CHIP 0.47MF
C778	1-163-038-00 CERAMIC CHIP 0.1MF 25V	Deletes
C779	1-131-387-00 TANTALUM 47MF 10% 6.3V	1-135-101-21 TANTAL, CHIP 22MF 20% 6.3V
D704	8-719-101-23 DIODE 1SS123	8-719-801-54 DIODE 1SS190
Q721	8-729-100-76 TRANSISTOR 2SA812	8-729-200-74 TRANSISTOR 2SA1162
R722	1-216-033-00 METAL CHIP 220 5% 1/10W	1-216-077-00 METAL CHIP 15K 5% 1/10W
R844	1-249-405-11 CARBON 100 5% 1/6W	1-216-025-00 METAL CHIP 100 5% 1/10W
R845	1-249-417-11 CARBON 1K 5% 1/6W	1-216-049-00 METAL CHIP 1K 5% 1/10W
R846	1-249-414-11 CARBON 560 5% 1/6W	1-216-043-00 METAL CHIP 560 5% 1/10W
R847	———	1-216-087-00 METAL CHIP 39K 5% 1/10W

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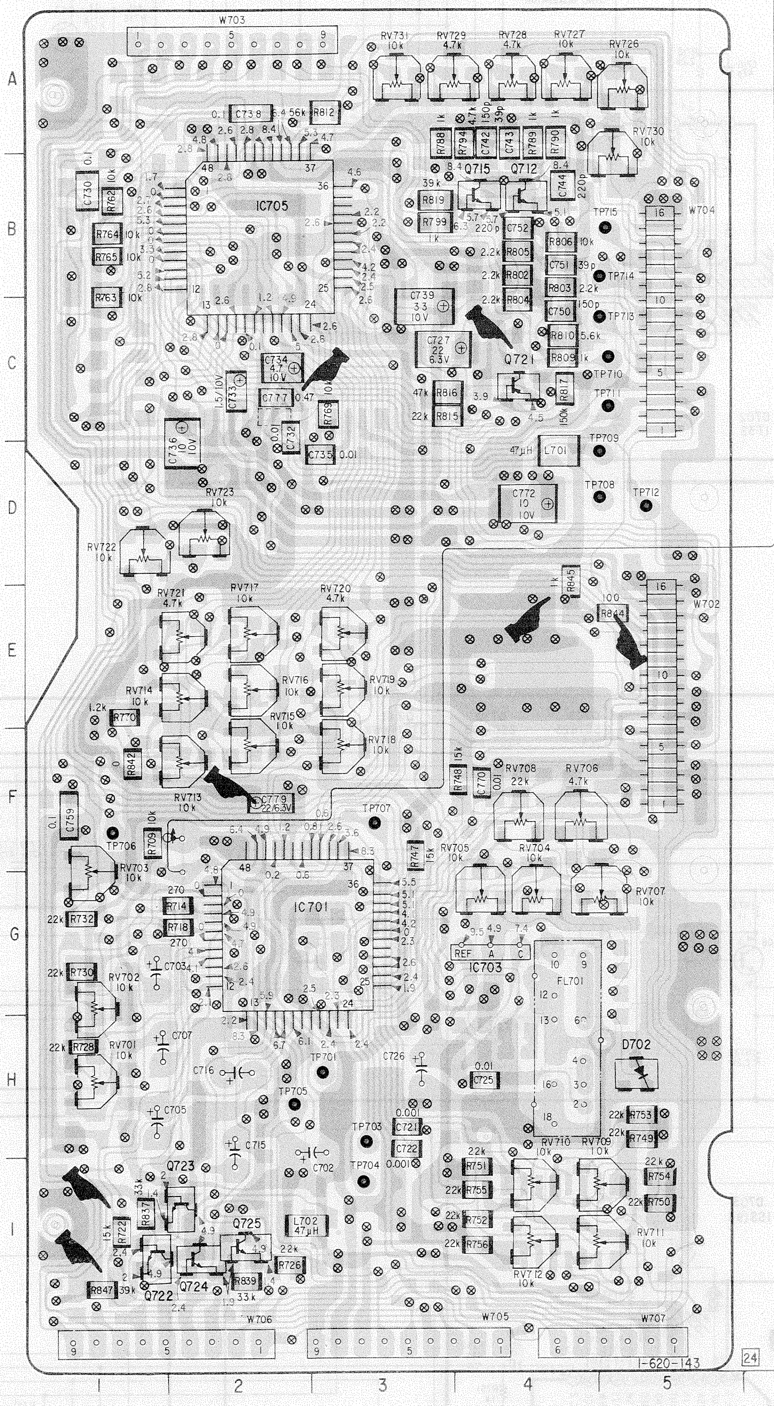
▭ : Deletes (Printed wiring board)

▨ : Deletes (Schematic diagram)

: Replaced

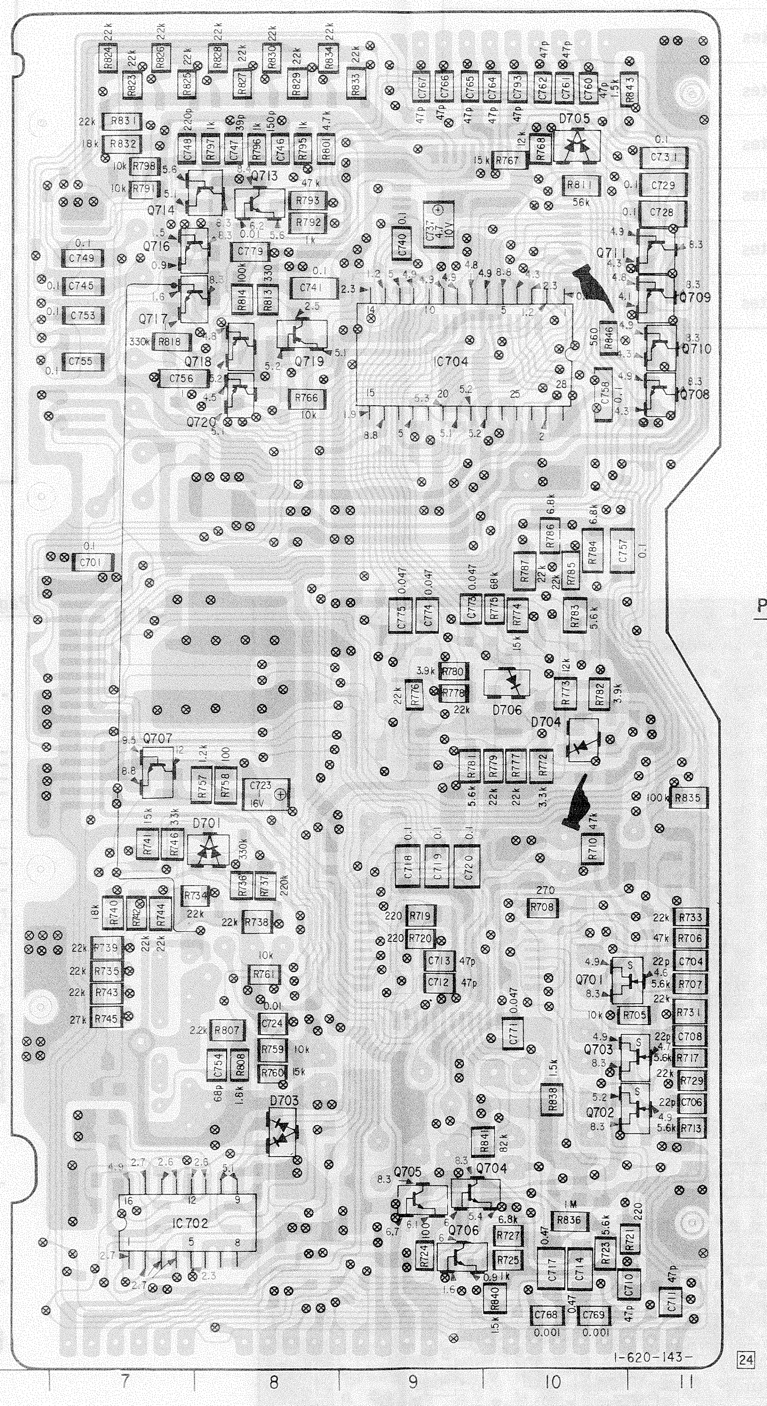
D701	F - 8
D702	H - 5
D703	H - 8
D704	E - 10
D705	A - 10
D706	E - 10
IC701	G - 3
IC702	I - 7
IC703	G - 4
IC704	C - 9
IC705	B - 2
Q701	G - 10
Q702	H - 10
Q703	H - 10
Q704	I - 9
Q705	I - 9
Q706	I - 9
Q707	F - 7
Q708	C - 11
Q709	B - 11
Q710	C - 11
Q711	B - 11
Q712	B - 4
Q713	B - 8
Q714	B - 7
Q715	B - 4
Q716	B - 7
Q717	C - 7
Q718	C - 8
Q719	C - 8
Q720	C - 8
Q721	C - 4
Q722	I - 1
Q723	I - 2
Q724	I - 2
Q725	I - 2
RV701	H - 1
RV702	G - 1
RV703	F - 1
RV704	G - 4
RV705	G - 4
RV706	F - 4
RV707	G - 5
RV708	F - 4
RV709	I - 5
RV710	I - 4
RV711	I - 5
RV712	I - 4
RV713	F - 2
RV714	E - 2
RV715	F - 2
RV716	E - 2
RV717	E - 2
RV718	F - 3
RV719	E - 3
RV720	E - 3
RV721	E - 2
RV722	D - 1
RV723	D - 2
RV726	A - 5
RV727	A - 4
RV728	A - 4
RV729	A - 3
RV730	A - 5
RV731	A - 3
TP701	H - 3
TP703	H - 3
TP704	I - 3
TP705	H - 2
TP706	F - 1
TP707	F - 3
TP708	D - 4
TP709	D - 4
TP710	C - 5
TP711	C - 5
TP712	D - 5
TP713	C - 5
TP714	B - 5
TP715	B - 5

ME-4 BOARD (COMPONENT SIDE) no mark: CAMERA POWER SW ON mode



A
B
C
D
E
F
G
H
I
1
2
3
4
5
IC705
IC701
IC703
FL701
W703
W704
W702
W705
W706
W707
1-620-143-
24

ME-4 BOARD (SOLDER SIDE) no mark: CAMERA POWER SW ON mode



6
7
8
9
10
11
IC704
IC702
1-620-143-
24

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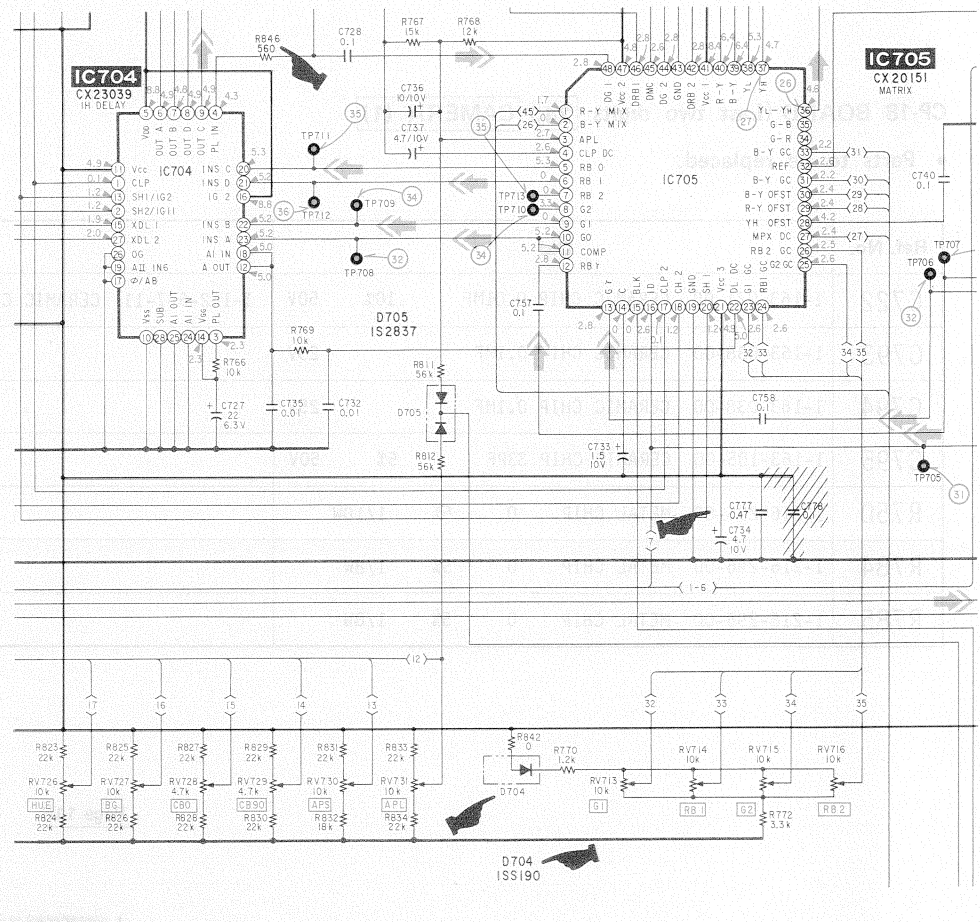

IC704
CX23039
1H DELAY
IC705
CX20151
MATRIX
D705
1S2837
D704
1SS190

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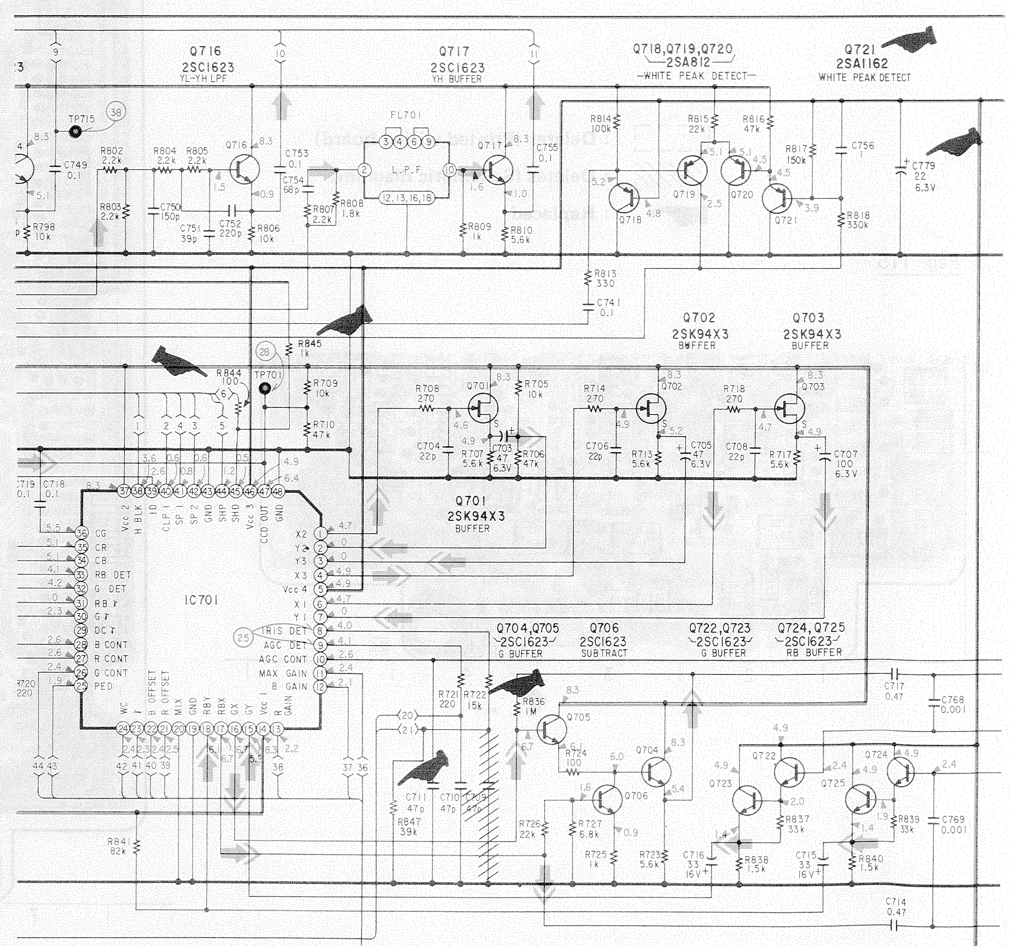

Q716
2SC1623
YL-YH LPF
Q717
2SC1623
YH BUFFER
Q718,Q719,Q720
2SA812
WHITE PEAK DETECT
Q721
2SA1162
WHITE PEAK DETECT
FL701
L.P.F.
Q702
2SK94X3
BUFFER
Q703
2SK94X3
BUFFER
Q701
2SK94X3
BUFFER
IC701
Q704,Q705
2SC1623
G BUFFER
Q706
2SC1623
SUBTRACT
Q722,Q723
2SC1623
G BUFFER
Q724,Q725
2SC1623
RB BUFFER

CP-18 BOARD (Last two digits 24) CAMERA (1)

- Parts to be replaced.

Ref. No.	Old	New
C722	1-163-021-00 CERAMIC CHIP 0.01MF 10% 50V	1-162-637-11 CERAMIC CHIP 0.47MF 16V
C793	1-163-038-00 CERAMIC CHIP 0.1MF 25V	Deletes
C794	1-163-038-00 CERAMIC CHIP 0.1MF 25V	Deletes
C795	1-163-105-00 CERAMIC CHIP 33PF 5% 50V	Deletes
R750	1-216-295-00 METAL CHIP 0 5% 1/10W	Deletes
R784	1-216-296-00 METAL CHIP 0 5% 1/8W	Deletes
R785	1-216-296-00 METAL CHIP 0 5% 1/8W	Deletes

▭ : Deletes (Printed wiring board)

▨ : Deletes (Schematic diagram)

☛ : Replaced

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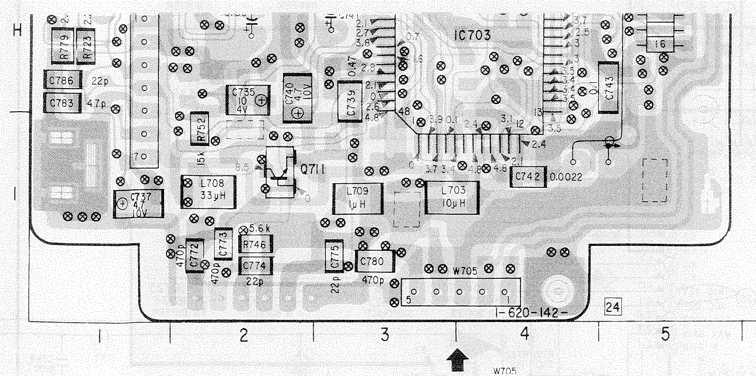
IC703
Q711
L708 33μH
L709 1μH
L703 10μH
C742 0.0022
W705
1-620-142-
24
H
I
1
2
3
4
5

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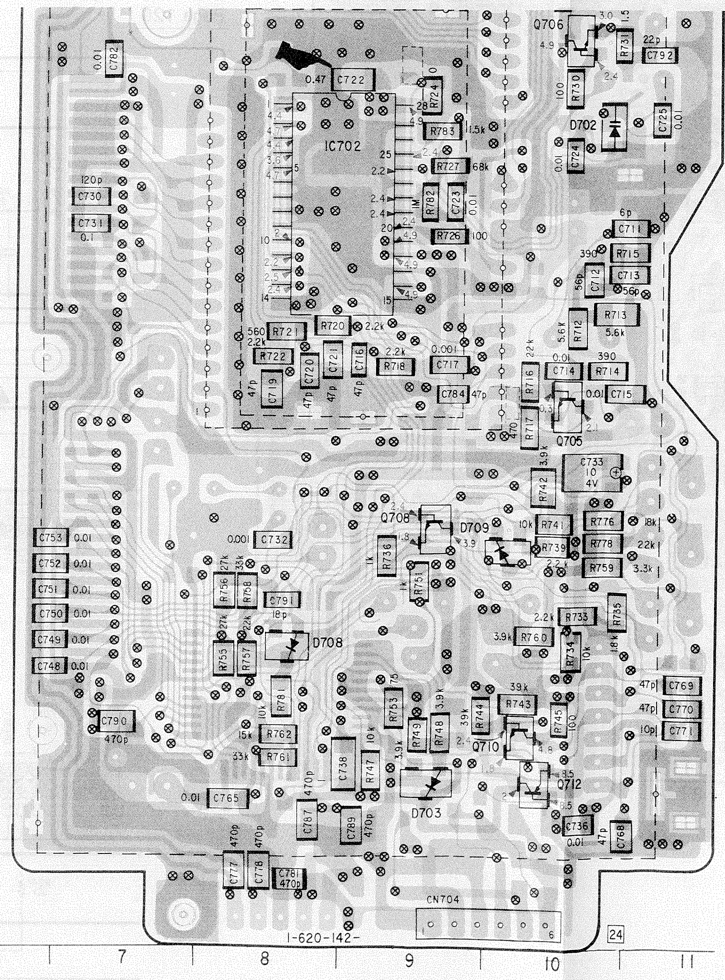
IC702
C722
0.47
Q706
D702
Q708
Q709
Q710
Q712
D703
D708
CN704
1-620-142-
24
7
8
9
10
11

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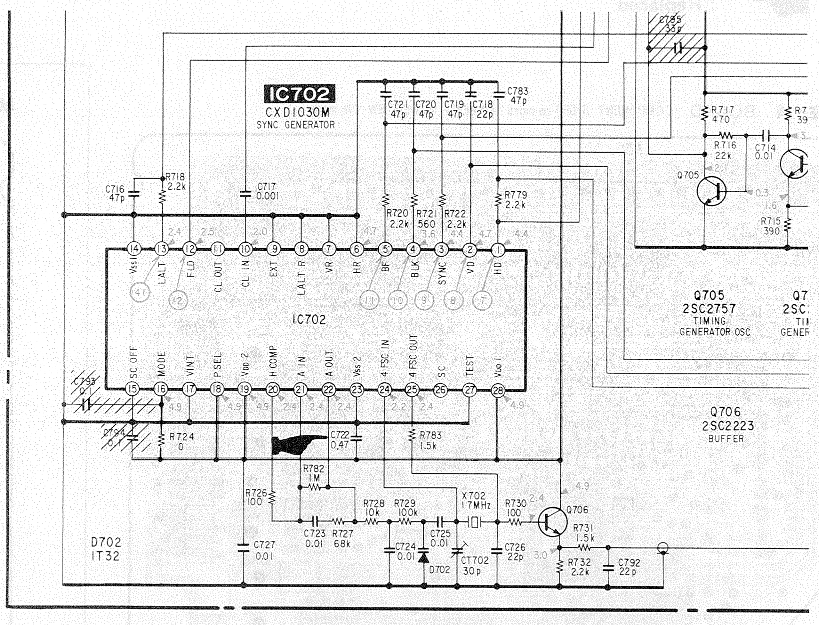
IC702
CXD1030M
SYNC GENERATOR
C722 0.47
R782 1M
X702 17MHz
D702 1T32
Q705 2SC2757 TIMING GENERATOR OSC
Q706 2SC2223 BUFFER

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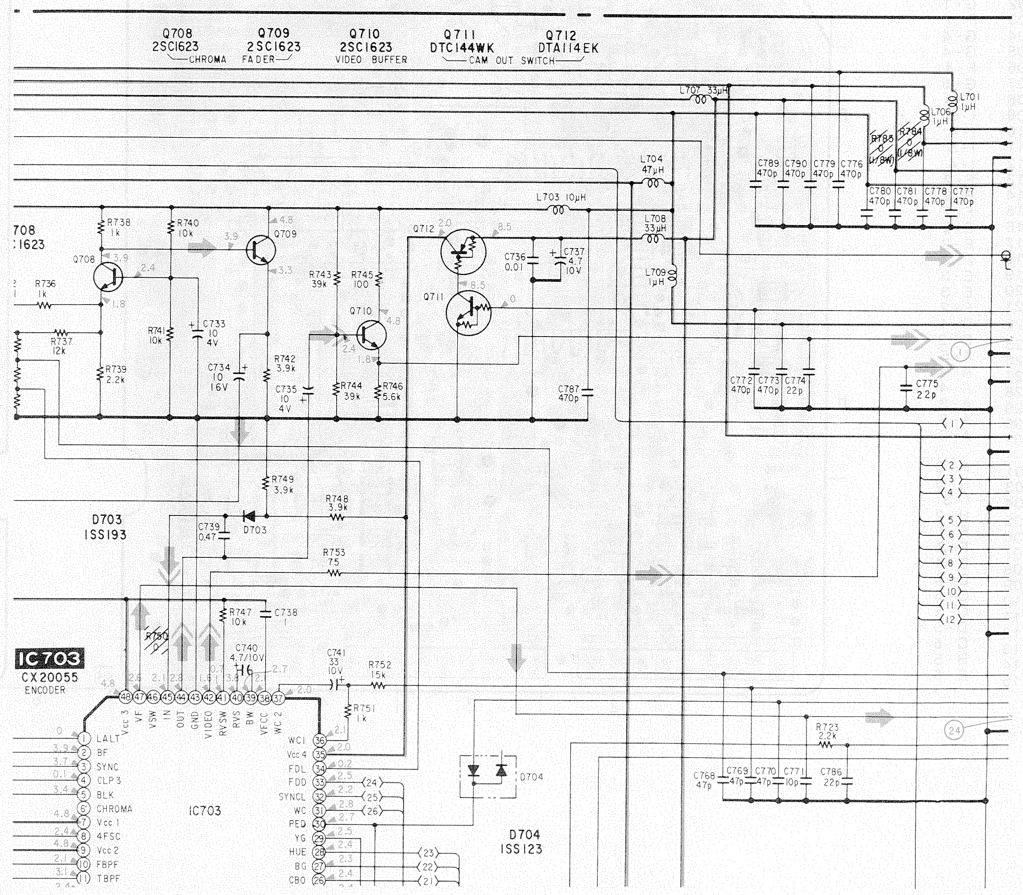
Q708 2SC1623 CHROMA
Q709 2SC1623 FADER
Q710 2SC1623 VIDEO BUFFER
Q711 DTC144WK
Q712 DTA114EK
CAM OUT SWITCH
D703 1SS193
IC703 CX20055 ENCODER
D704 1SS123
L701
L703 10μH
L704 47μH
L707 33μH
L708 33μH
L709 1μH

AT-5 BOARD (Last two digits 24) CAMERA (2)

- **Parts to be replaced.**

Ref. No.	Old	New
R888	1-216-085-00 METAL CHIP 33K 5% 1/10W	1-216-095-00 METAL CHIP 82K 5% 1/10W
R889	————	1-216-073-00 METAL CHIP 10K 5% 1/10W

☛ : Replaced

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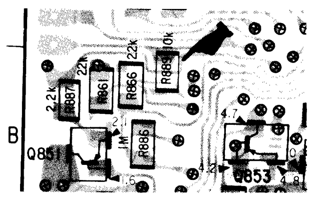
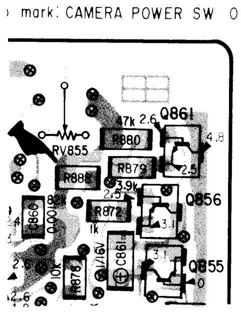

B
Q851
R887
2.2k
R861
22k
R886
22k
R885
10k
1M
R884
Q853

Page 125


mark: CAMERA POWER SW ON mode
47k
2.6
Q861
4.8
R880
RV855
R879
R888
R878
R872
1k
Q856
C861
Q855

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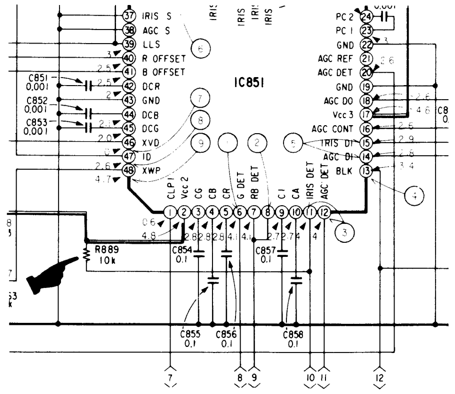
IRIS S
AGC S
LLS
R OFFSET
B OFFSET
DCR
GND
DCB
DCG
XVD
ID
XWP
IC851
PC2
PC1
GND
AGC REF
AGC DET
GND
AGC DO
Vcc 3
AGC CONT
IRIS DI
AGC DI
BLK
C851 0.001
C852 0.001
C853 0.001
R889 10k
C854 0.1
C857 0.1
C855 0.1
C856 0.1
C858 0.1

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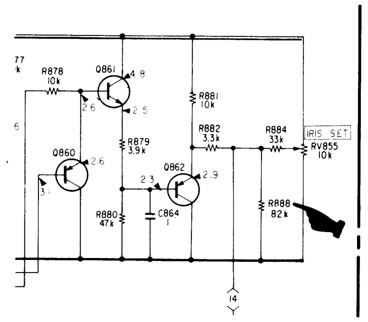
R878 10k
Q861
4.8
R881 10k
R882 3.3k
R884 33k
IRIS SET
RV855 10k
Q860
R879 3.9k
Q862
2.9
R880 47k
C864
R888 82k

AW-3 BOARD (Last two digits 24) CAMERA (2)

- **Parts to be replaced.**

Ref. No.	Old	New
D706	8-719-801-48 DIODE 1SS193	Deletes
D708	8-719-911-19 DIODE 1SS119	Deletes
D709	8-719-911-19 DIODE 1SS119	Deletes
R736	1-249-422-11 CARBON 2.7K 5% 1/6W	1-216-059-00 METAL CHIP 2.7K 5% 1/10W

⬚ : Deletes (Printed wiring board)

▨ : Deletes (Schematic diagram)

☛ : Replaced

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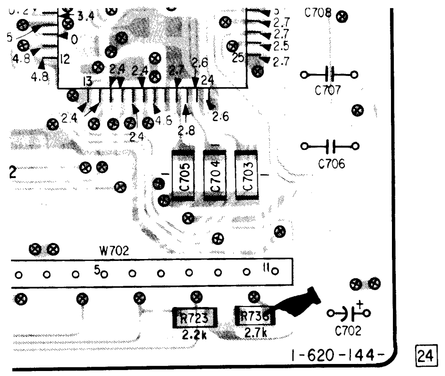
C708
C707
C706
C705
C704
C703
W702
R723
2.2k
R736
2.7k
C702
1-620-144-
24

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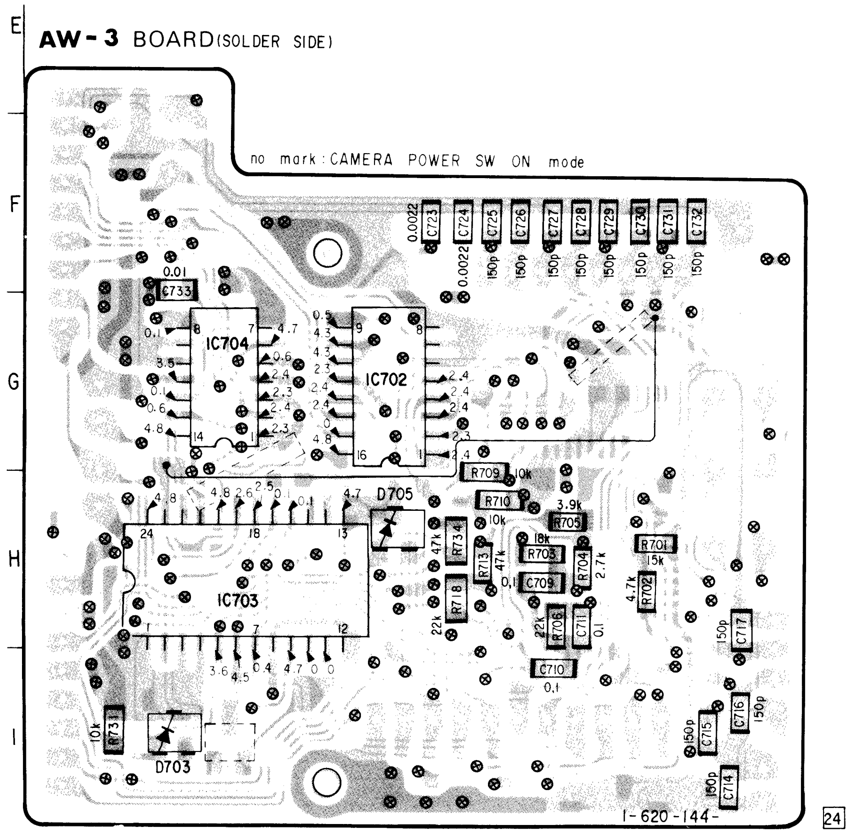
E
F
G
H
I
AW-3 BOARD (SOLDER SIDE)
no mark: CAMERA POWER SW ON mode
C723
C724
C725
C726
C727
C728
C729
C730
C731
C732
C733
IC704
IC702
IC703
D705
D703
R709
R710
R705
R703
R704
R701
R702
R713
R714
R718
R706
R707
C709
C710
C711
C714
C715
C716
C717
R737
1-620-144-
24

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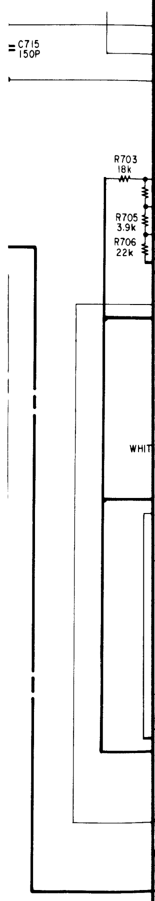
C715 150P
R703 18k
R705 3.9k
R706 22k
WHIT

AW-3 BOARD (Last two digits 24) CAMERA (2)

- **Parts to be replaced.**

Ref. No.	Old	New
D706	8-719-801-48 DIODE 1SS193	Deletes
D708	8-719-911-19 DIODE 1SS119	Deletes
D709	8-719-911-19 DIODE 1SS119	Deletes
R736	1-249-422-11 CARBON 2.7K 5% 1/6W	1-216-059-00 METAL CHIP 2.7K 5% 1/10W

▭ : Deletes (Printed wiring board)

▨ : Deletes (Schematic diagram)

☛ : Replaced

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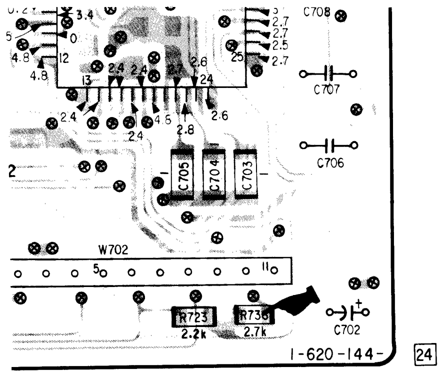

C708
C707
C706
C705
C704
C703
W702
R723
2.2k
R736
2.7k
C702
1-620-144-
24

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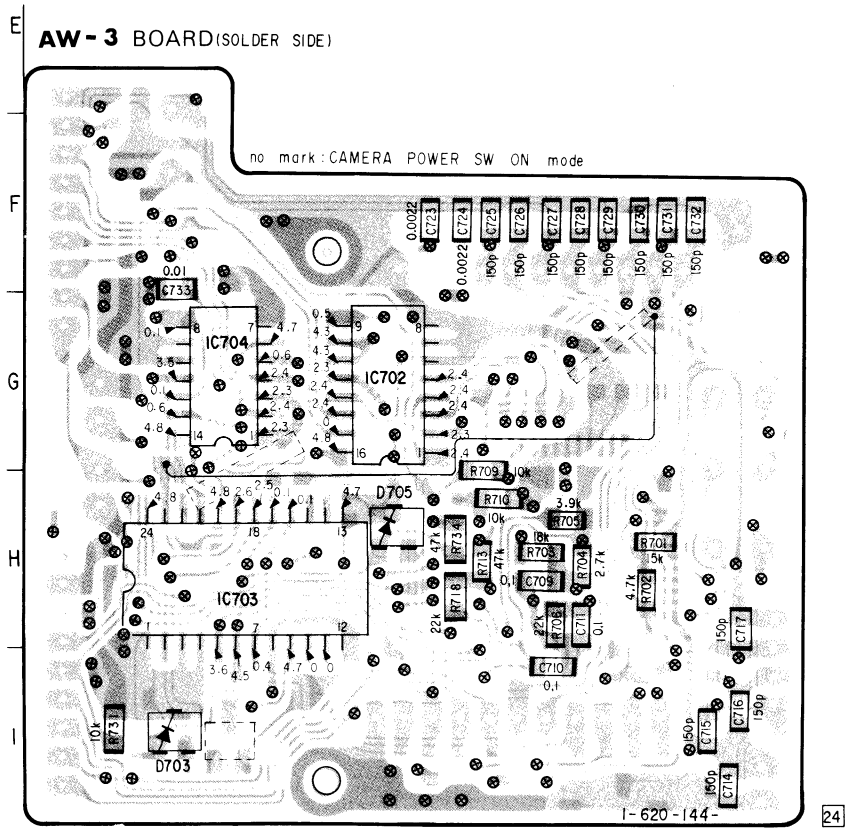
AW-3 BOARD(SOLDER SIDE)



E
F
G
H
I
no mark : CAMERA POWER SW ON mode
C723
C724
C725
C726
C727
C728
C729
C730
C731
C732
C733
IC704
IC702
IC703
D705
D703
R709
R710
R705
R734
R713
R703
R704
R701
R702
R718
R708
C709
C711
C710
C717
C716
C715
C714
R731
1-620-144-
24

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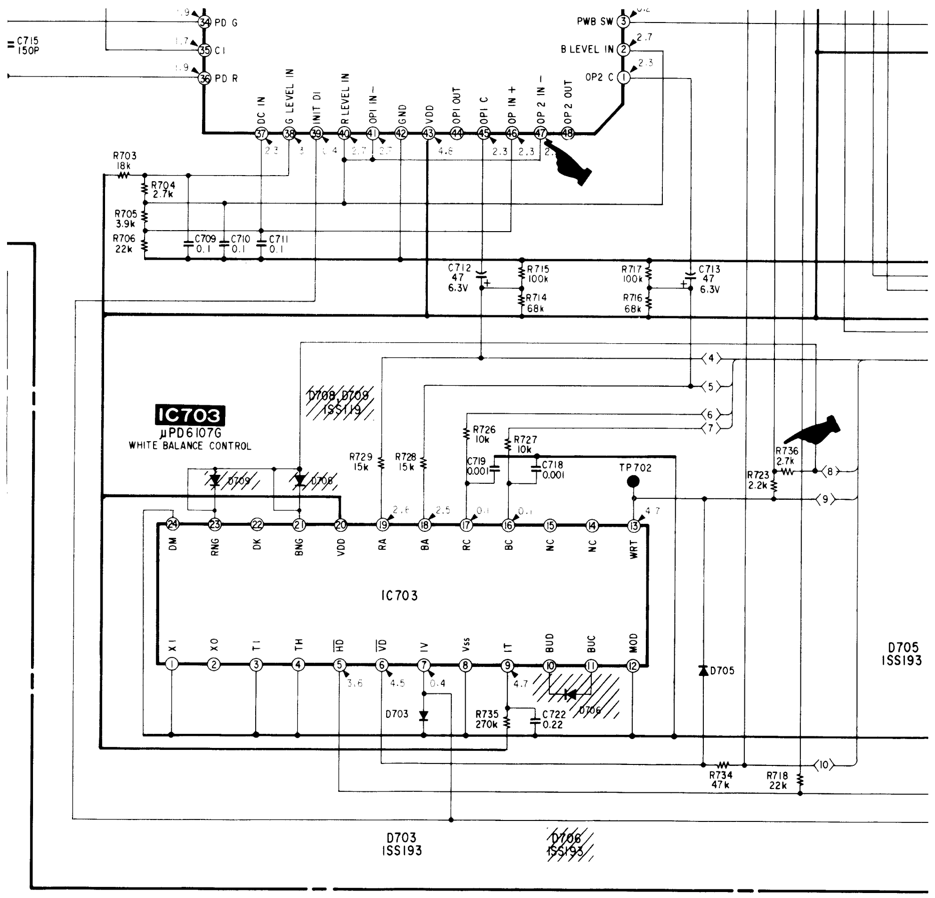


PD G
CI
PD R
PWB SW
B LEVEL IN
OP2 C
C715
150P
DC IN
G LEVEL IN
INIT DI
R LEVEL IN
OP1 IN -
GND
VDD
OP1 OUT
OP1 C
OP IN +
OP 2 IN -
OP 2 OUT
R703 18k
R704 2.7k
R705 3.9k
R706 22k
C709 0.1
C710 0.1
C711 0.1
C712 47 6.3V
R715 100k
R714 68k
R717 100k
R716 68k
C713 47 6.3V
IC703
μPD6107G
WHITE BALANCE CONTROL
D708 D709 1SS119
R729 15k
R728 15k
R726 10k
R727 10k
C719 0.001
C718 0.001
TP702
R736 2.7k
R723 2.2k
DW
RNG
DK
BNG
VDD
RA
BA
RC
BC
NC
NC
WRT
XI
XO
TI
TH
HD
VD
IV
Vss
IT
BUD
BUC
MOD
IC703
D703
R735 270k
C722 0.22
D706
D705
1SS193
R734 47k
R718 22k
D703
1SS193
D706
1SS193

AI-1 BOARD (Last two digits 24) CAMERA (2)

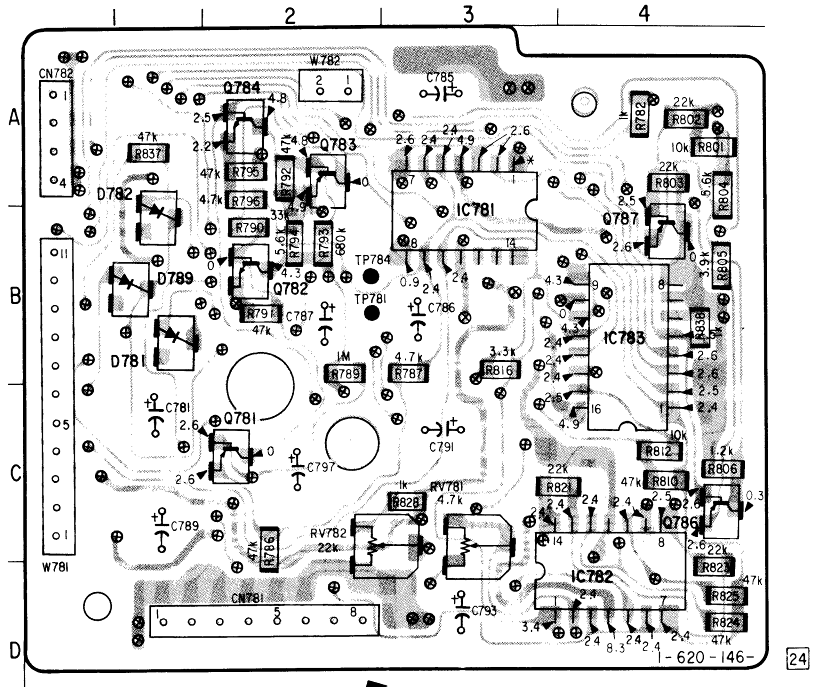
- As to parts to be replaced, refer to the Electrical parts list.

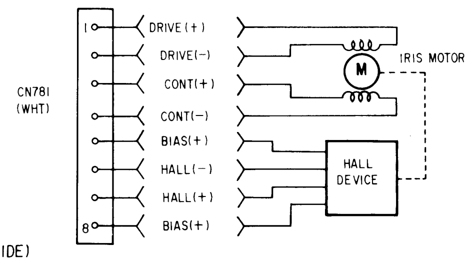
Page 126

D781	B-1
D782	B-1
D783	H-4
D784	G-4
D785	G-4
D786	G-4
D789	B-1
IC781	B-3
IC782	D-4
IC783	B-4
IC784	H-2
Q781	C-2
Q782	B-2
Q783	A-2
Q784	A-2
Q785	I-2
Q786	C-4
Q787	B-4
Q788	H-4
Q789	H-3
Q790	H-4
Q791	G-4
Q792	G-3
Q793	I-4
RV781	C-3
RV782	C-2
TP781	B-2
TP784	B-2

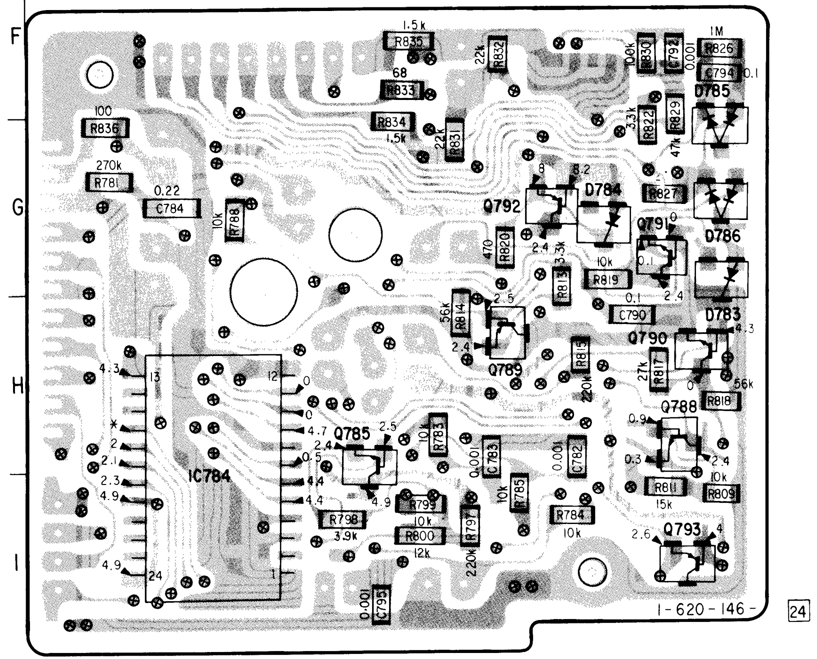
AI-1 BOARD(COMPONENT SIDE)

no mark : CAMERA POWER SW ON mode
✱ : can not be measured


1
2
3
4
A
B
C
D
CN782
W782
W781
CN781
IC781
IC782
IC783
Q781
Q782
Q783
Q784
Q786
Q787
D781
D782
D789
TP781
TP784
RV781
RV782
1-620-146-
24


CN781
(WHT)
DRIVE(+)
DRIVE(−)
CONT(+)
CONT(−)
BIAS(+)
HALL(−)
HALL(+)
BIAS(+)
IRIS MOTOR
M
HALL
DEVICE

AI-1 BOARD(SOLDER SIDE)


E
F
G
H
I
IC784
Q785
Q788
Q789
Q790
Q792
Q793
D783
D784
D785
D786
1-620-146-
24

no mark : CAMERA POWER SW ON mode
✱ : can not be measured

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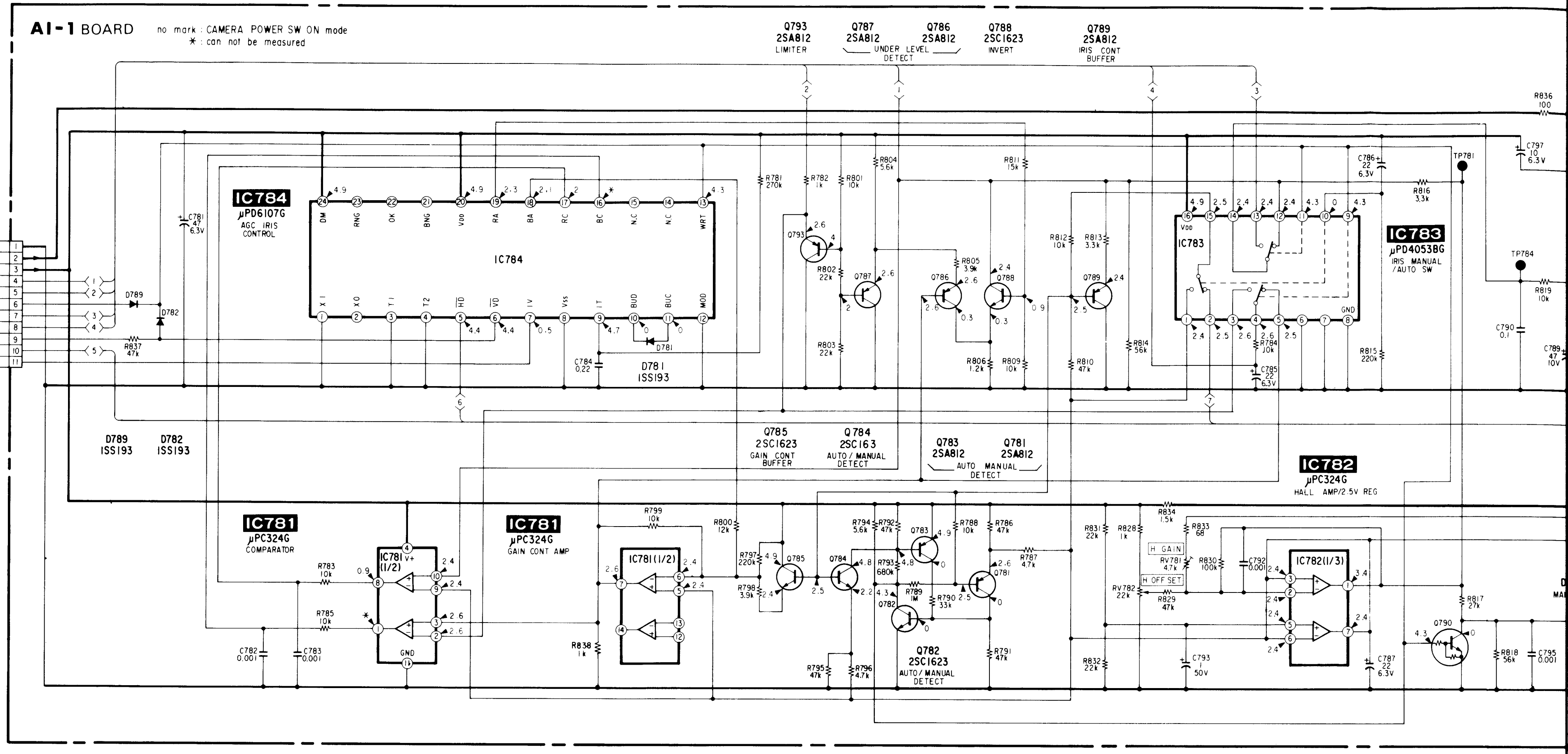
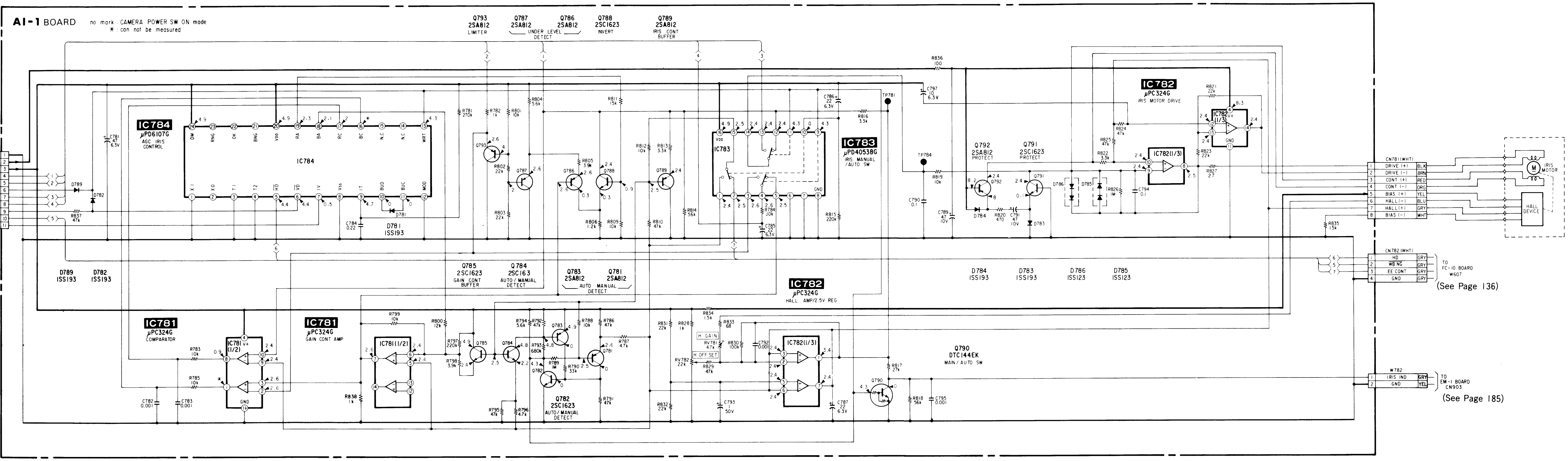

AI-1 BOARD
no mark : CAMERA POWER SW ON mode
✱ : can not be measured
Q793 2SA812 LIMITER
Q787 2SA812
Q786 2SA812
UNDER LEVEL DETECT
Q788 2SC1623 INVERT
Q789 2SA812 IRIS CONT BUFFER
IC784 μPD6107G AGC IRIS CONTROL
IC783 μPD4053BG IRIS MANUAL /AUTO SW
W781
GND
8.5V
5V
OFD
AGC C
AUTO
IRIS CONT
AGC CONT
VDT
WB NG
IV
D781 1SS193
D789 1SS193
D782 1SS193
Q785 2SC1623 GAIN CONT BUFFER
Q784 2SC163 AUTO/MANUAL DETECT
Q783 2SA812
Q781 2SA812
AUTO MANUAL DETECT
IC782 μPC324G HALL AMP/2.5V REG
IC781 μPC324G COMPARATOR
IC781 μPC324G GAIN CONT AMP
Q782 2SC1623 AUTO/MANUAL DETECT
H GAIN
H OFF SET
TP781
TP784

FC-10 BOA

- Parts to

Ref. No.	
S601	1-
S602	1-
S603	1-
S604	1-
S605	1-

- Printed W


AI-1 BOARD
no mark : CAMERA POWER SW ON mode
* : can not be measured
Q793 2SA812 LIMITER
Q787 2SA812
Q786 2SA812
UNDER LEVEL DETECT
Q788 2SC1623 INVERT
Q789 2SA812 IRIS CONT BUFFER
IC784 μPD6107G AGC IRIS CONTROL
IC783 μPD4053BG IRIS MANUAL /AUTO SW
IC782 μPC324G IRIS MOTOR DRIVE
Q792 2SA812 PROTECT
Q791 2SC1623 PROTECT
D789 1SS193
D782 1SS193
D781 1SS193
Q785 2SC1623 GAIN CONT BUFFER
Q784 2SC163 AUTO / MANUAL DETECT
Q783 2SA812
Q781 2SA812
AUTO MANUAL DETECT
IC782 μPC324G HALL AMP/2.5V REG
D784 1SS193
D783 1SS193
D786 1SS123
D785 1SS123
IC781 μPC324G COMPARATOR
IC781 μPC324G GAIN CONT AMP
Q782 2SC1623 AUTO / MANUAL DETECT
Q790 DTC144EK MAIN / AUTO SW
H GAIN
H OFF SET
CN781 (WHT)
DRIVE (+) BLK
DRIVE (-) BRN
CONT (+) RED
CONT (-) ORG
BIAS (+) YEL
HALL (-) BLU
HALL (+) GRY
BIAS (-) WHT
IRIS MOTOR
HALL DEVICE
CN782 (WHT)
HD GRY
WB NG GRY
EE CONT GRY
GND GRY
TO FC-10 BOARD W607
(See Page 136)
W782
IRIS IND GRY
GND YEL
TO EM-1 BOARD CN903
(See Page 185)

FC-10 BOARD (Last two digits 23) CAMERA (3)

- **Parts to be replaced.**

Ref. No.	Old	New
S601	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S602	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S603	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S604	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)
S605	1-554-371-31 SWITCH, TACT	1-570-909-21 SWITCH, TACTIL (REFLOW TYPE)

- **Printed Wiring Board and Schematic Diagram are omitted.**

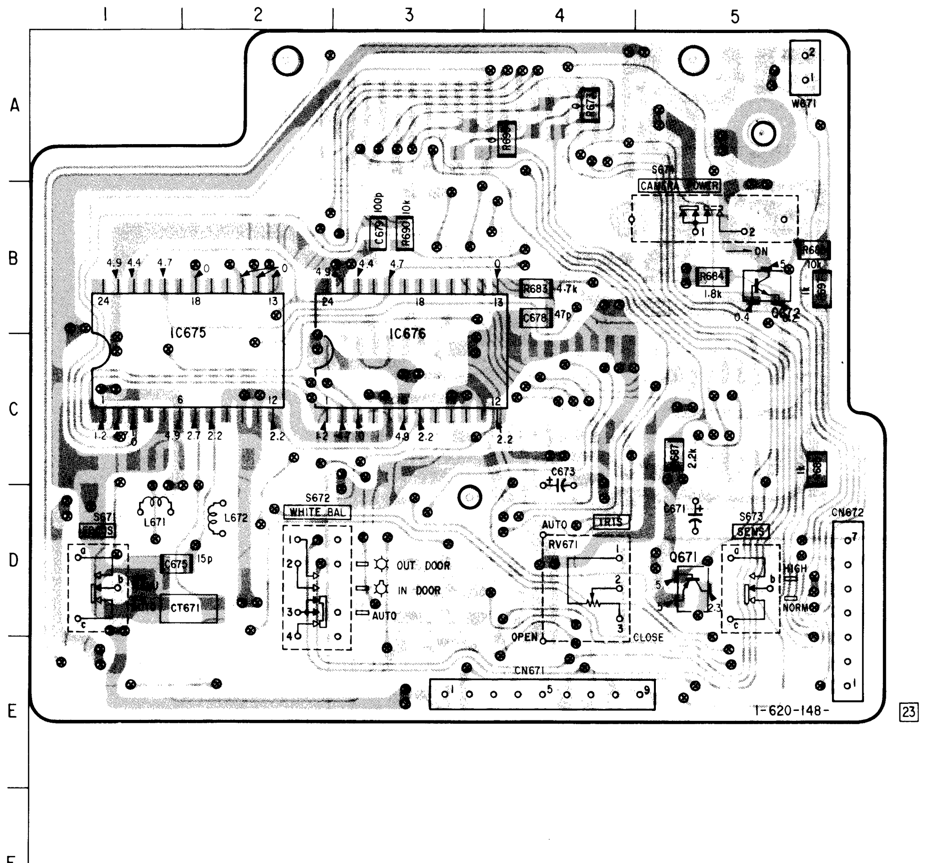
CG-1 BOARD (Last two digits 23) CAMERA (3)

- **As to parts to be replaced, refer to the Electrical parts list.**

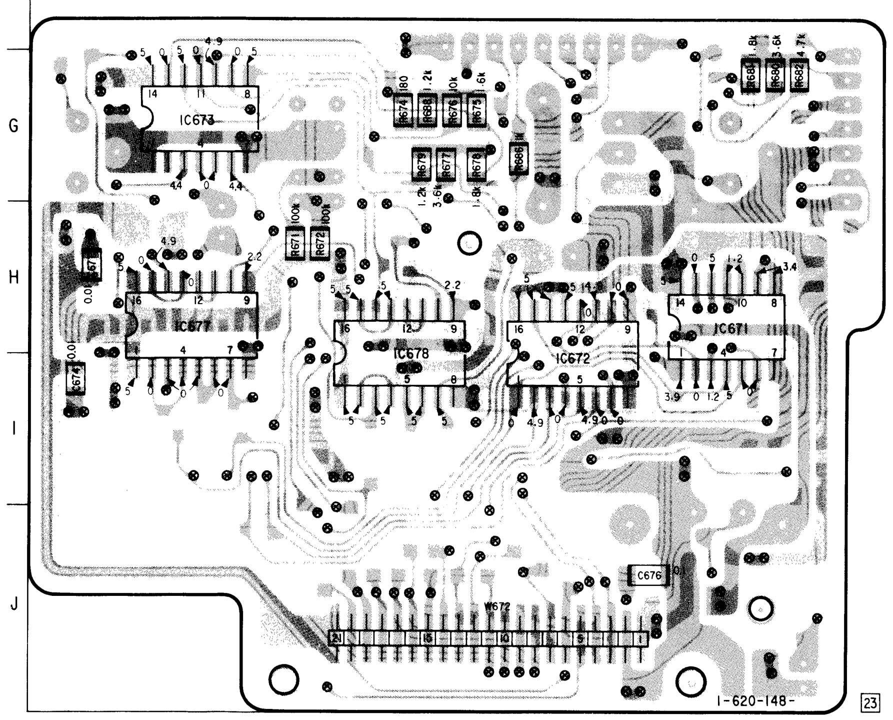
Page 133

CT671	D-1
IC671	H-5
IC672	H-4
IC673	G-1
IC675	C-1
IC676	C-3
IC677	H-1
IC678	H-3
Q671	D-5
Q672	B-5
RV671	D-4

CG-1 BOARD (COMPONENT SIDE) no mark : CAMERA POWER SW ON mode


1
2
3
4
5
A
B
C
D
E
F
IC675
IC676
S674 CAMERA POWER
ON
Q672
R684 1.8k
S672 WHITE BAL
OUT DOOR
IN DOOR
AUTO
RV671
IRIS
S673 SENS
HIGH
NORM
Q671
L671
L672
CT671
C675 15p
C673
CN671
CN672
W671
OPEN
CLOSE
1-620-148-
23

CG-1 BOARD (SOLDER SIDE) no mark : CAMERA POWER SW ON mode


G
H
I
J
IC673
IC677
IC678
IC672
IC671
C676
W672
1-620-148-
23

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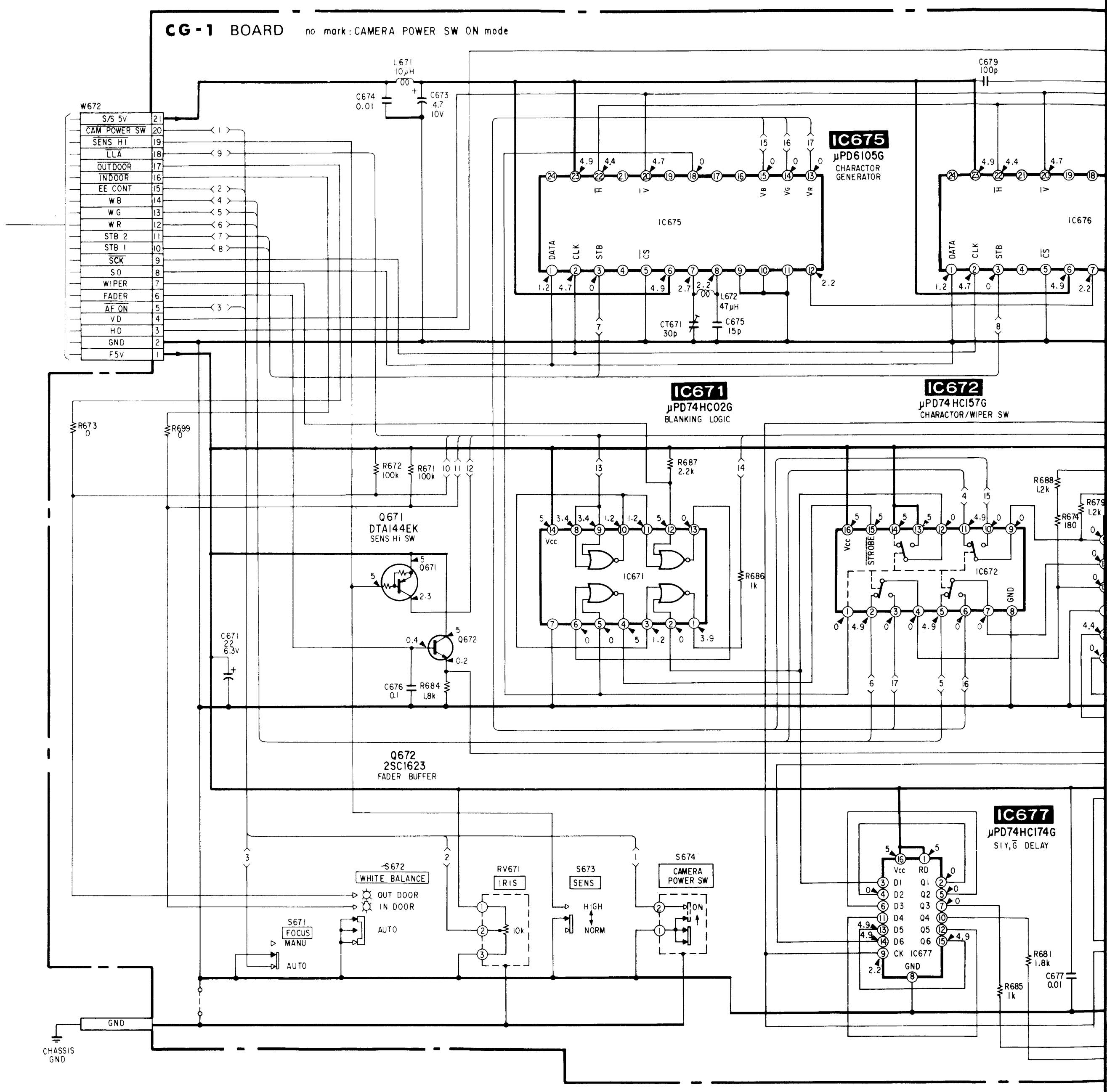
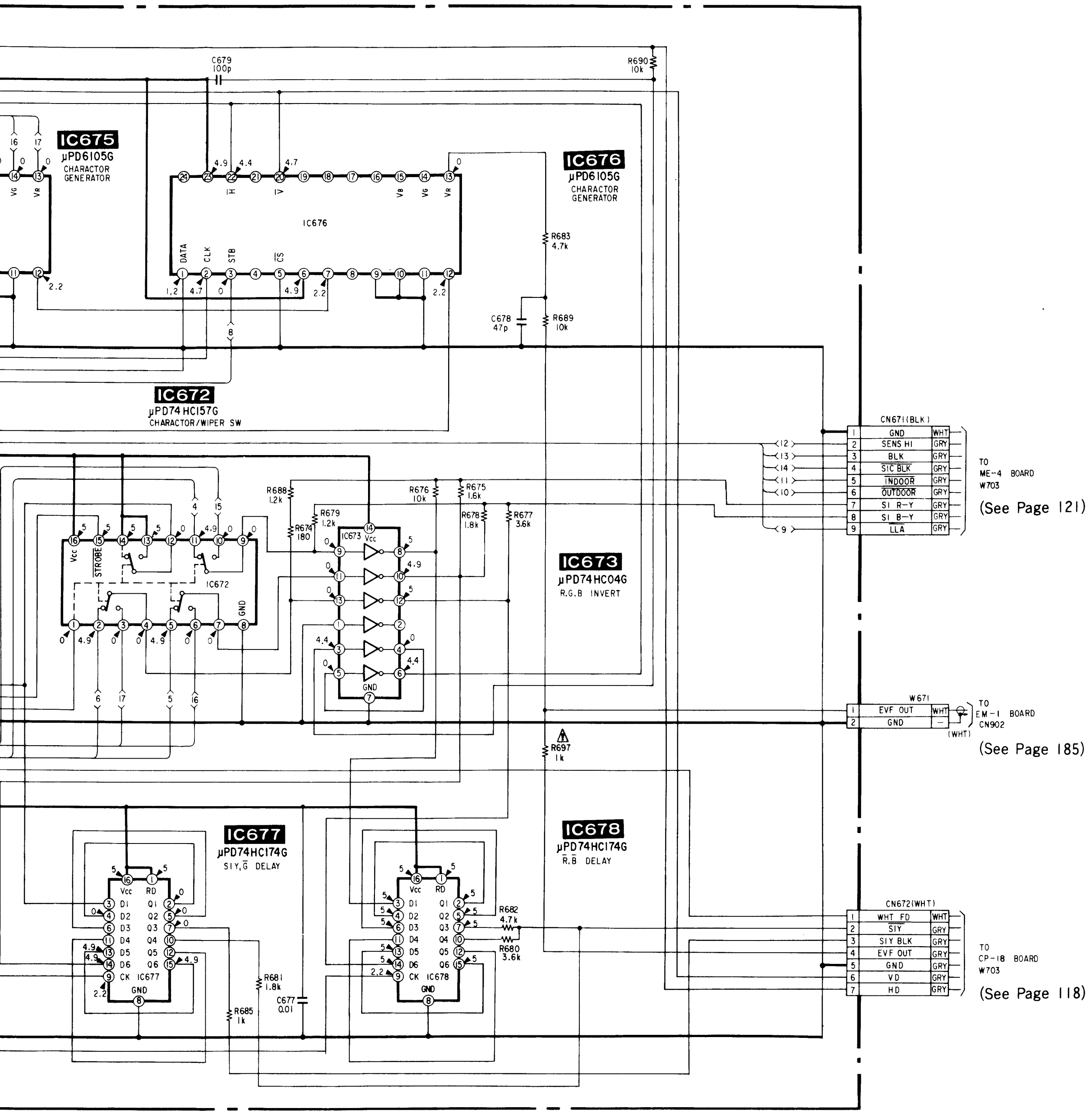

CG-1 BOARD no mark : CAMERA POWER SW ON mode
W672
S/S 5V
CAM POWER SW
SENS HI
LLA
OUTDOOR
INDOOR
EE CONT
WB
WG
WR
STB 2
STB 1
SCK
SO
WIPER
FADER
AF ON
VD
HD
GND
F5V
L671 10μH
C674 0.01
C673 4.7 10V
C679 100p
IC675
μPD6105G
CHARACTOR GENERATOR
IC676
L672 47μH
CT671 30p
C675 15p
IC671
μPD74HC02G
BLANKING LOGIC
IC672
μPD74HC157G
CHARACTOR/WIPER SW
R673 0
R699 0
R672 100k
R671 100k
R687 2.2k
R686 1k
R688 1.2k
Q671
DTA144EK
SENS HI SW
Q672
2SC1623
FADER BUFFER
C671 22 6.3V
C676 0.1
R684 1.8k
IC677
μPD74HC174G
SIY,G DELAY
R681 1.8k
R685 1k
C677 0.01
S672 WHITE BALANCE
OUT DOOR
IN DOOR
AUTO
S671 FOCUS
MANU
AUTO
RV671 IRIS 10k
S673 SENS
HIGH
NORM
S674 CAMERA POWER SW
ON
GND
CHASSIS GND

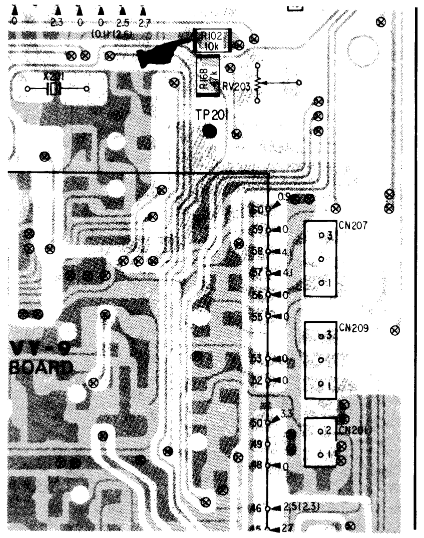

C679
100p
R690
10k
IC675
μPD6105G
CHARACTOR GENERATOR
IC676
μPD6105G
CHARACTOR GENERATOR
R683
4.7k
C678
47p
R689
10k
IC672
μPD74HC157G
CHARACTOR/WIPER SW
R688
1.2k
R679
1.2k
R674
180
R676
10k
R675
1.6k
R678
1.8k
R677
3.6k
IC673
μPD74HC04G
R.G.B INVERT
CN671(BLK)
GND
SENS HI
BLK
SIC BLK
INDOOR
OUTDOOR
SI R-Y
SI B-Y
LLA
TO ME-4 BOARD W703
(See Page 121)
W671
EVF OUT
GND
TO EM-1 BOARD CN902
(See Page 185)
R697
1k
IC677
μPD74HC174G
SIY, G DELAY
IC678
μPD74HC174G
R.B DELAY
R682
4.7k
R680
3.6k
R681
1.8k
R685
1k
C677
0.01
CN672(WHT)
WHT FD
SIY
SIY BLK
EVF OUT
GND
VD
HD
TO CP-18 BOARD W703
(See Page 118)

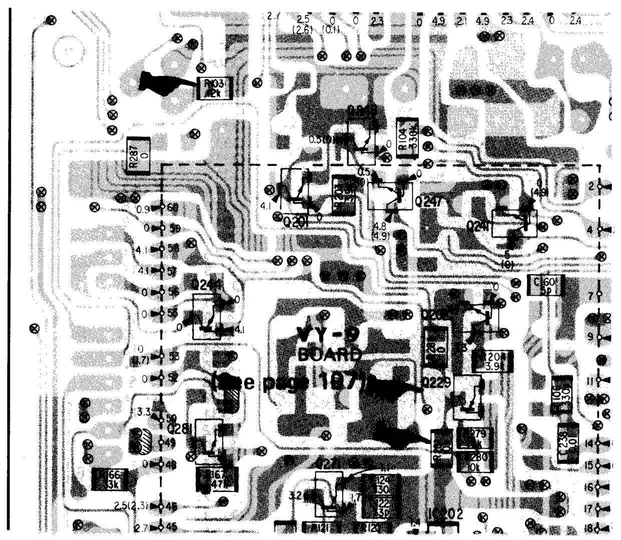
VI-22 BOARD (Last two digits 12) VIDEO

- **Parts to be replaced.**

Ref. No.	Old	New
Q229	8-729-900-99 TRANSISTOR DTA144WK	8-729-903-38 TRANSISTOR DTA144TK
R102	1-216-077-00 METAL CHIP 15K 5% 1/10W	1-216-073-00 METAL CHIP 10K 5% 1/10W
R103	1-216-077-00 METAL CHIP 15K 5% 1/10W	1-216-075-00 METAL CHIP 12K 5% 1/10W
R281	1-216-065-00 METAL CHIP 4.7K 5% 1/10W	1-216-073-00 METAL CHIP 10K 5% 1/10W

Page 148 ☛ : Replaced


R102
10k
R103
TP201
CN207
CN209
VY-6 BOARD


Q281
Q229
VY-6 BOARD
(See page 187)

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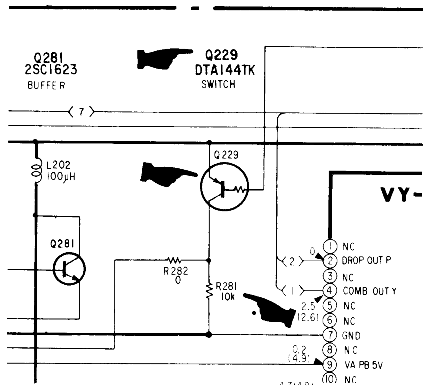
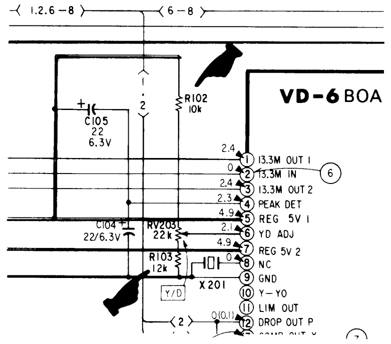

Q281
2SC1623
BUFFER
Q229
DTA144TK
SWITCH
L202
100μH
Q229
Q281
R282
0
R281
10k
VY-
NC
DROP OUT P
NC
COMB OUT Y
NC
NC
GND
NC
VA PB 5V
NC

Page 155

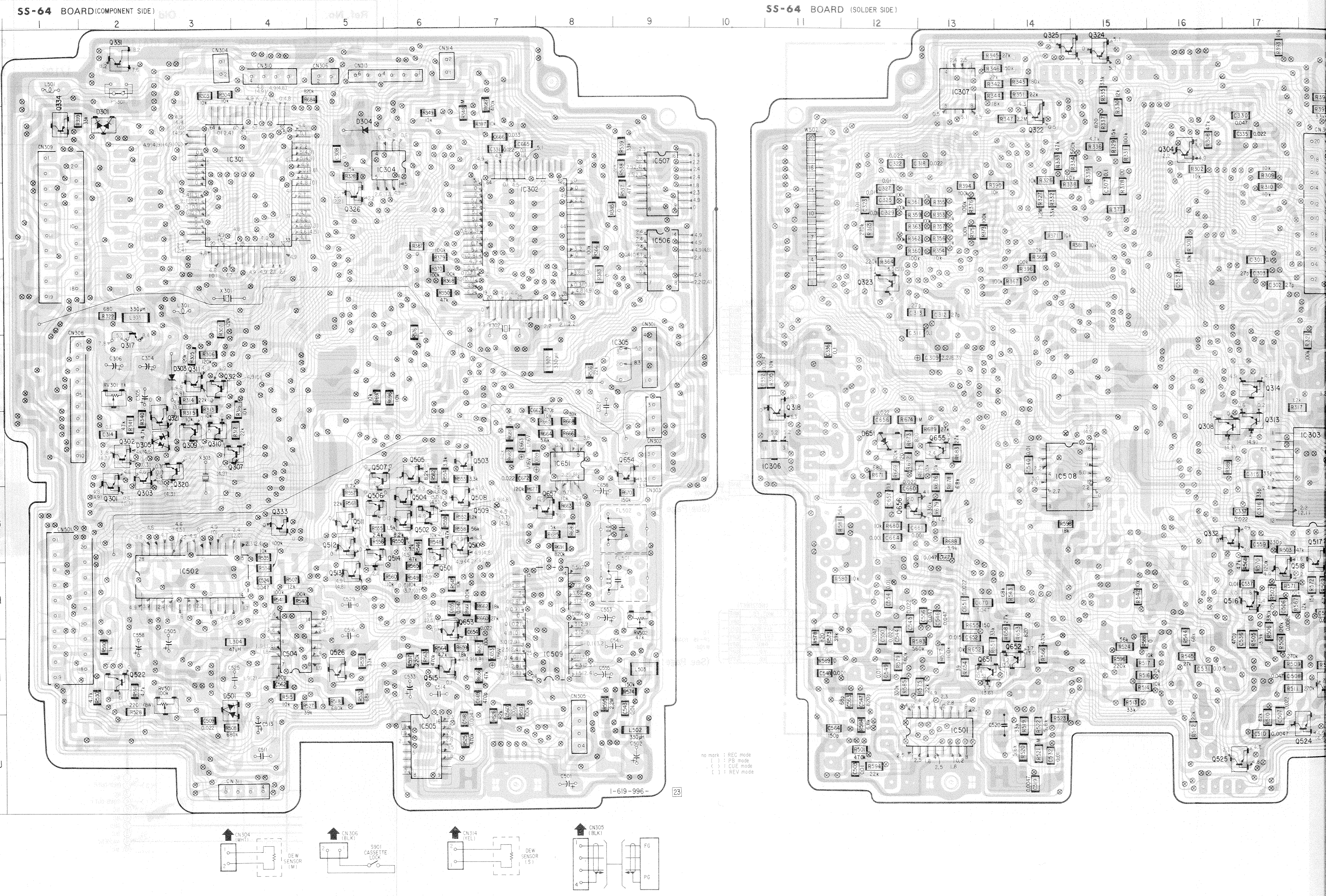

C105
22
6.3V
R102
10k
VD-6 BOA
13.3M OUT 1
13.3M IN
13.3M OUT 2
PEAK DET
REG 5V 1
YD ADJ
REG 5V 2
NC
GND
Y-YO
LIM OUT
DROP OUT P
C104
22/6.3V
RV201
22k
R103
12k
X201

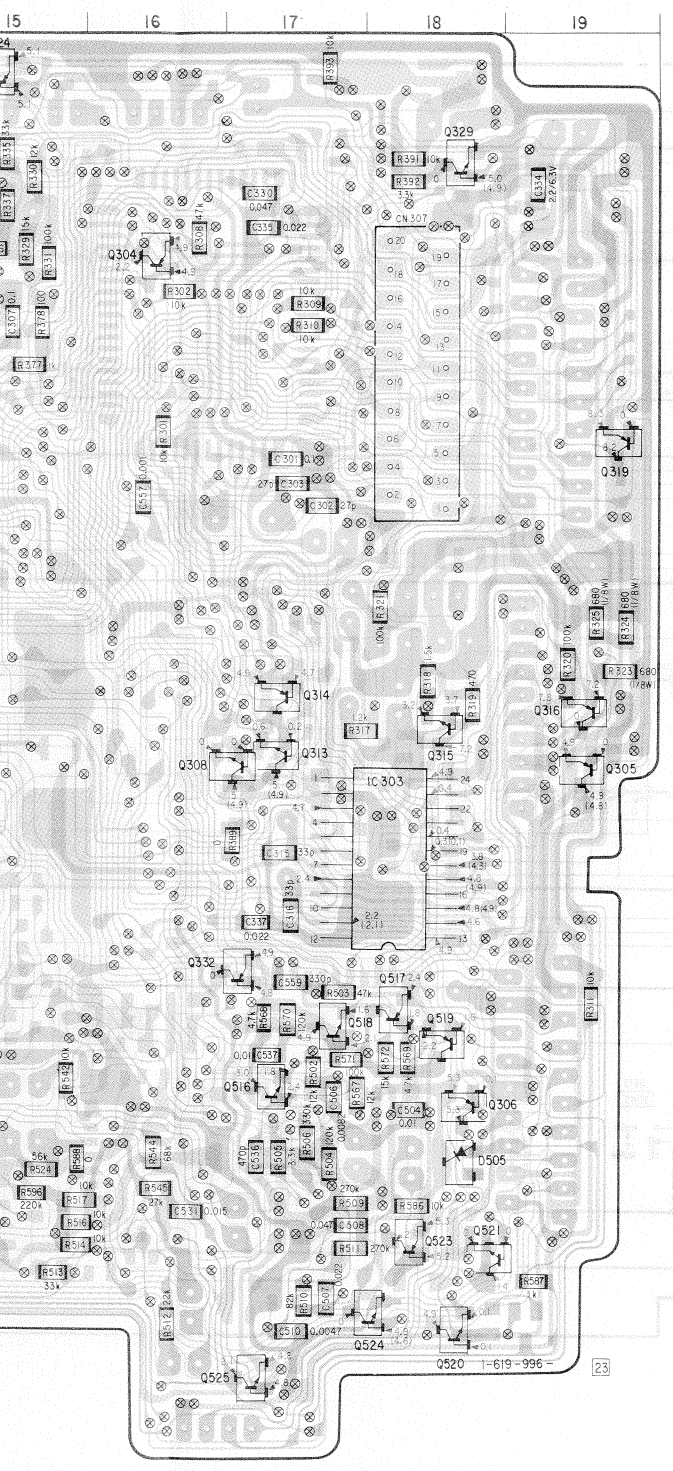
SS-64, DR-36, TS-55 BOARD (Last two digits 23) SERVO · SYSTEM CONTROL

- As to parts to be replaced, refer to the Electrical parts list.

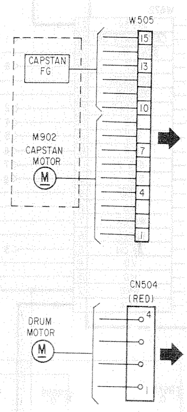
Page 159

D301	B - 2
D303	E - 3
D304	B - 5
D305	F - 3
D501	I - 3
D505	I - 18
D651	F - 12
IC301	B - 4
IC302	C - 7
IC303	F - 18
IC304	B - 6
IC305	E - 9
IC306	F - 11
IC307	A - 13
IC501	J - 13
IC502	H - 3
IC504	I - 4
IC505	J - 6
IC506	C - 9
IC507	B - 9
IC508	F - 14
IC509	I - 8
IC651	F - 8
Q301	F - 2
Q302	F - 2
Q303	F - 2
Q304	B - 16
Q305	F - 19
Q306	H - 18
Q307	F - 4
Q308	F - 16
Q309	F - 3
Q310	F - 3
Q311	E - 3
Q312	E - 3
Q313	F - 17
Q314	E - 17
Q315	E - 18
Q316	E - 19
Q317	E - 2
Q318	E - 11
Q319	C - 19
Q320	F - 3
Q321	F - 3
Q322	B - 14
Q323	D - 12
Q324	A - 15
Q325	A - 14
Q326	C - 5
Q329	A - 18
Q331	A - 2
Q332	G - 16
Q333	G - 4
Q334	**B - 1**
Q501	G - 6
Q502	G - 6
Q503	F - 7
Q504	G - 6
Q505	F - 6
Q506	G - 5
Q507	F - 5
Q508	G - 7
Q509	G - 6
Q510	G - 7
Q511	G - 5
Q512	G - 5
Q513	H - 5
Q514	G - 5
Q515	I - 6
Q516	H - 17
Q517	G - 18
Q518	H - 17
Q519	H - 18
Q520	J - 18
Q521	I - 18
Q522	I - 2
Q523	I - 18
Q524	J - 17
Q525	J - 17
Q526	I - 5
Q651	I - 13
Q652	I - 14
Q653	H - 6
Q654	F - 9
Q655	F - 13
Q656	G - 12
Q657	G - 8
RV301	E - 2
RV501	I - 3
RV502	H - 9

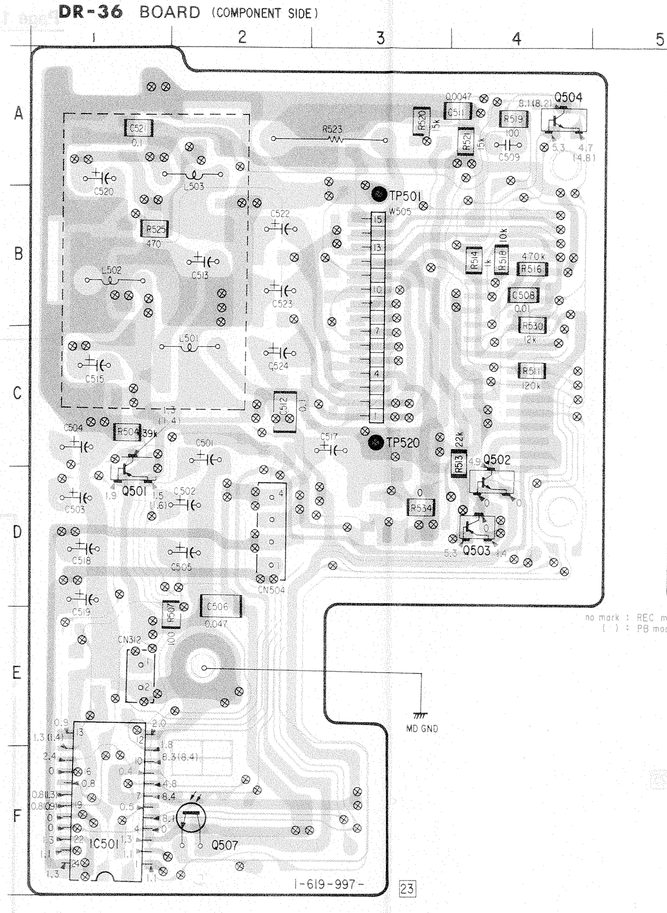

SS-64 BOARD (COMPONENT SIDE)
SS-64 BOARD (SOLDER SIDE)
1-619-996-
23
no mark : REC mode
( ) : PB mode
( ) : CUE mode
[ ] : REV mode
CN304 (WHT)
DEW SENSOR (M)
CN306 (BLK)
S901 CASSETTE LOCK
CN314 (YEL)
DEW SENSOR (S)
CN305 (BLK)
FG
PG



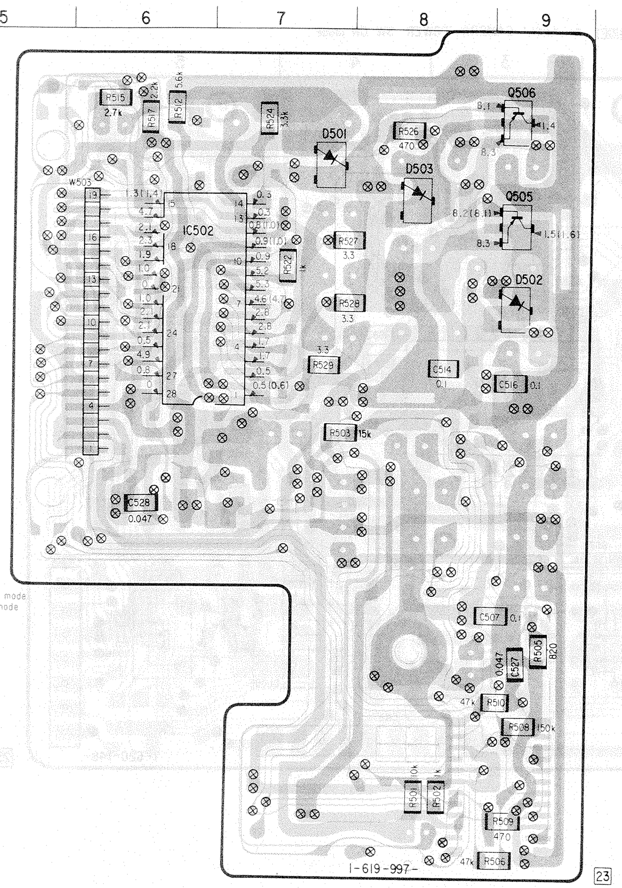
D501	A - 7
D502	B - 9
D503	B - 8
IC501	F - 1
IC502	B - 6
Q501	D - 1
Q502	D - 4
Q503	D - 4
Q504	A - 4
Q505	B - 9
Q506	A - 9
Q507	F - 2
TP501	B - 3
TP520	C - 3


W505
CAPSTAN FG
M902 CAPSTAN MOTOR
CN504 (RED)
DRUM MOTOR

DR-36 BOARD (COMPONENT SIDE)

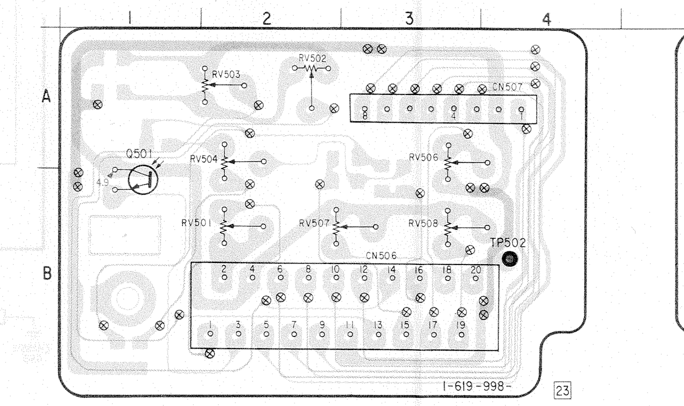


DR-36 BOARD (SOLDER SIDE)

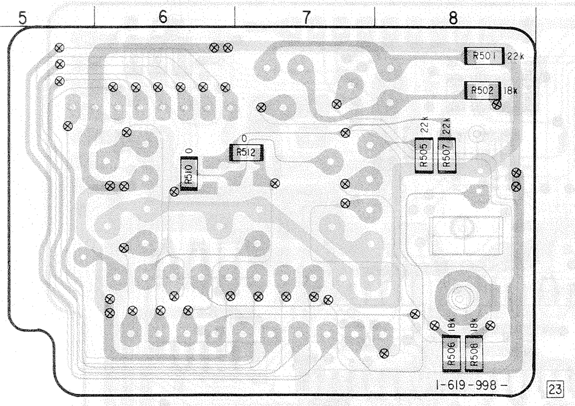


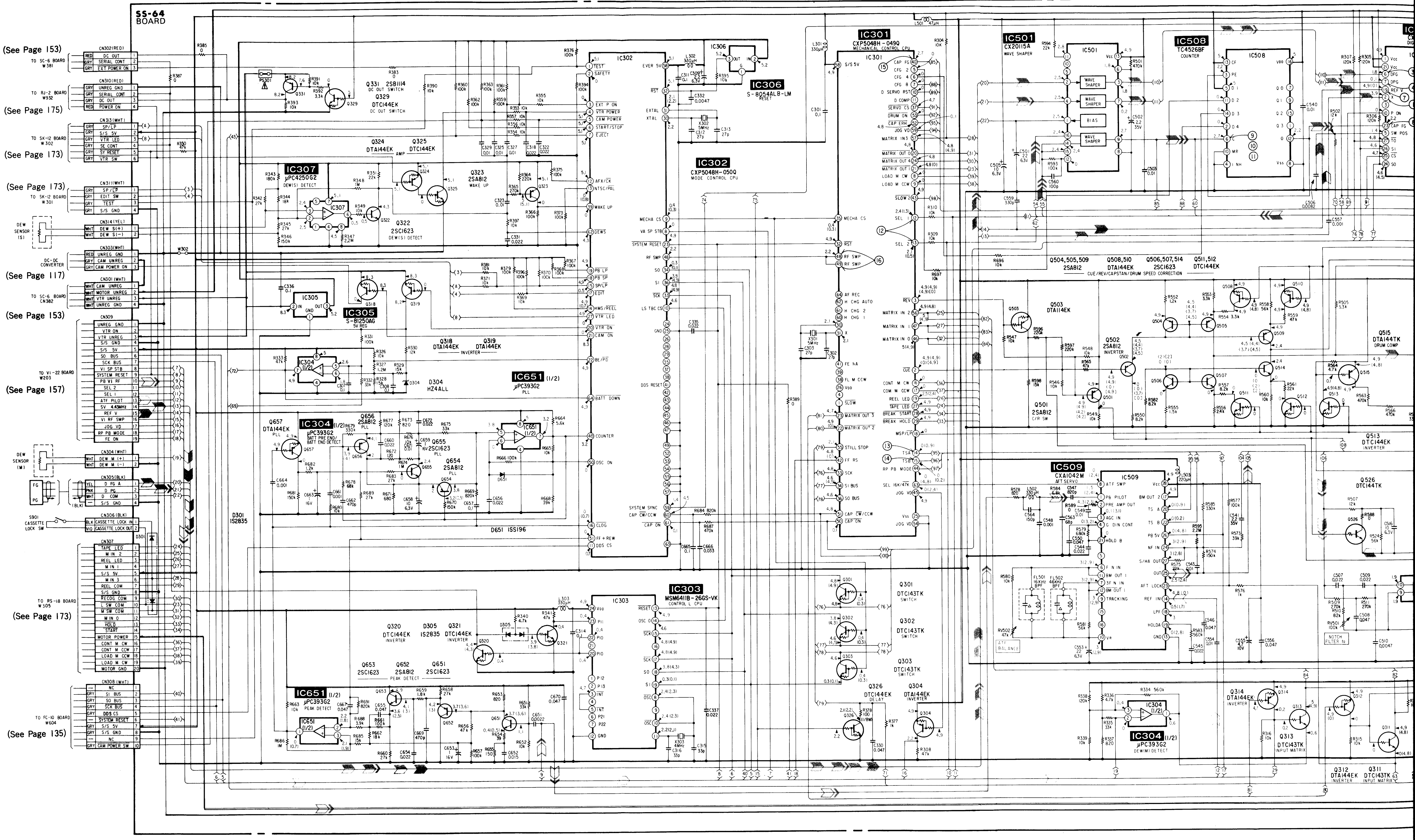
Q501	B - 1
RV501	B - 2
RV502	A - 2
RV503	A - 2
RV504	A - 2
RV506	A - 3
RV507	B - 2
RV508	B - 3
TP502	B - 4

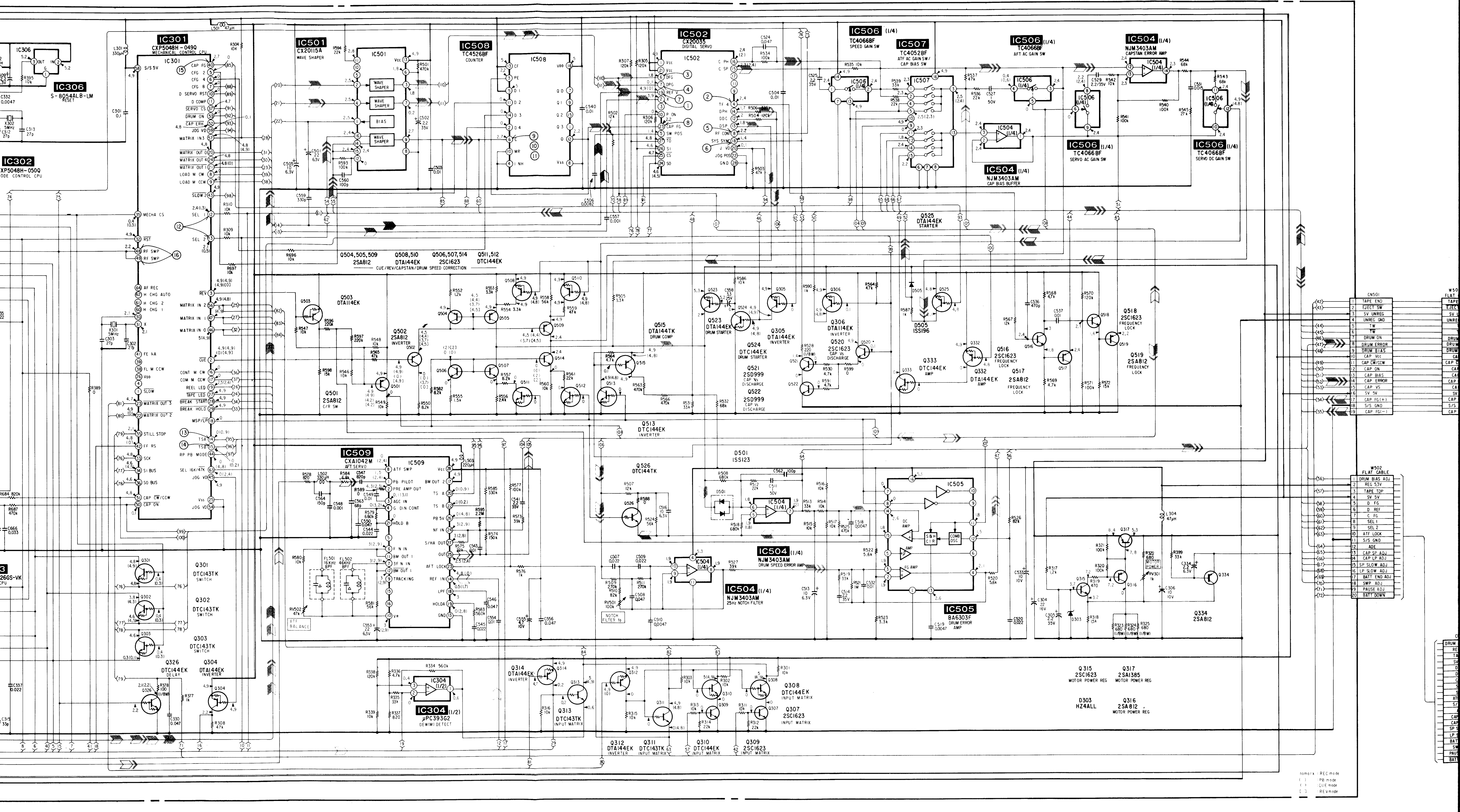
TS-55 BOARD (COMPONENT SIDE)

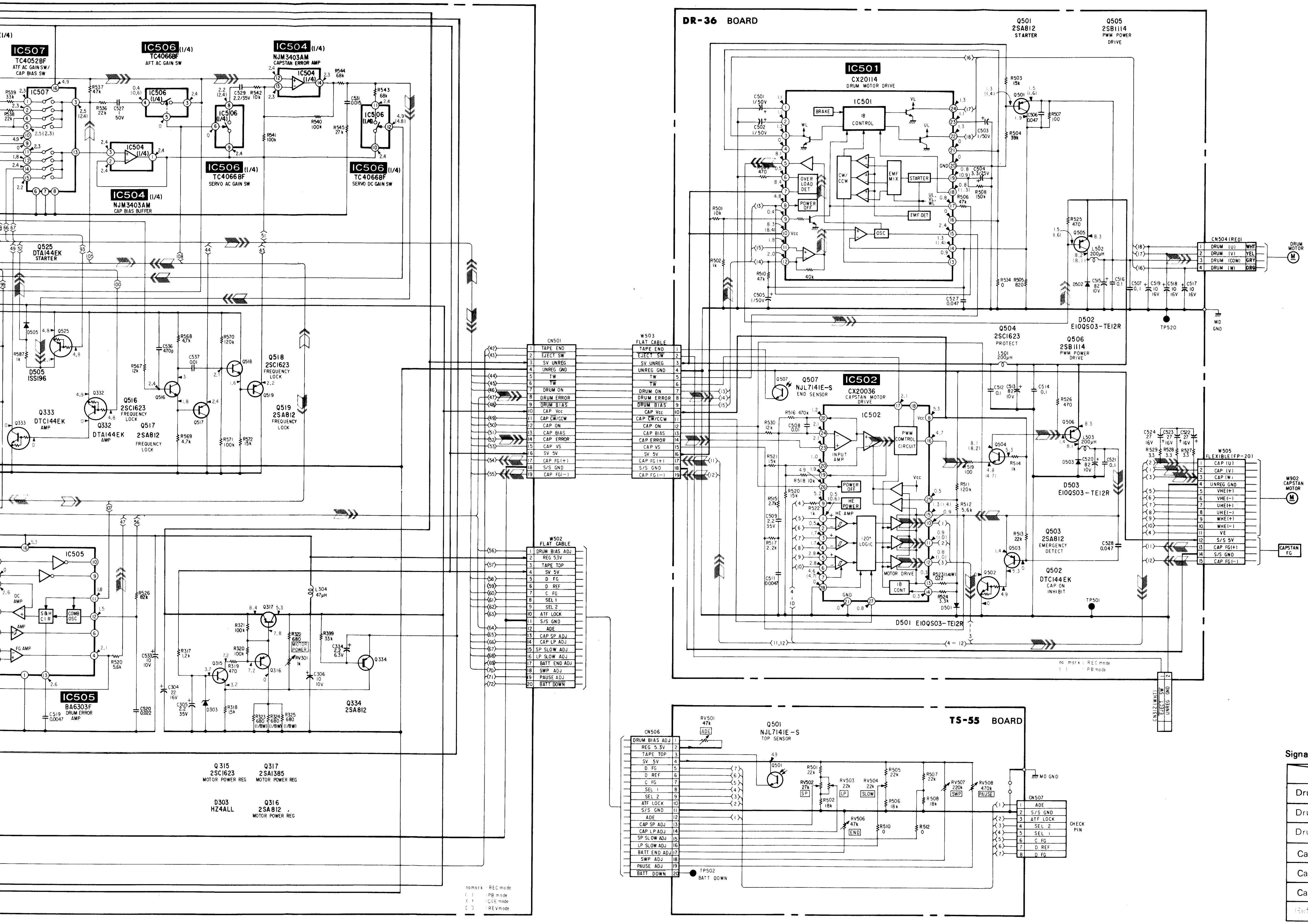


TS-55 BOARD (SOLDER SIDE)




SS-64 BOARD
(See Page 153)
TO SC-6 BOARD W381
CN302(RED)
DC OUT
SERIAL CONT
EXT POWER ON
TO RJ-2 BOARD W932
(See Page 175)
CN310(RED)
UNREG GND
SERIAL CONT
DC OUT
POWER ON
TO SK-12 BOARD W302
(See Page 173)
CN313(WHT)
SP/LP
S/S 5V
VTR LED
SE CONT
SY RESET
VTR SW
(See Page 173)
TO SK-12 BOARD W301
CN311(WHT)
SP/LP
EDIT SW
TEST
S/S GND
DEW SENSOR (S)
CN314(YEL)
DEW S(+)
DEW S(-)
DC-DC CONVERTER
(See Page 117)
CN303(WHT)
UNREG GND
CAM UNREG
CAM POWER ON
TO SC-6 BOARD CN382
(See Page 153)
CN301(WHT)
CAM UNREG
MOTOR UNREG
VTR UNREG
UNREG GND
CN309
TO VI-22 BOARD W203
(See Page 157)
UNREG GND
VTR ON
VTR UNREG
S/S GND
S/S 5V
SO BUS
SCK BUS
VI SP STB
SYSTEM RESET
PB VI RF
SEL 2
SEL 1
ATF PILOT
SV 4.43MHz
REF V
VI RF SWP
JOG VD
RP PB MODE
FE ON
DEW SENSOR (M)
CN304(WHT)
DEW M (+)
DEW M (-)
CN305(BLK)
FG
PG
D FG A
D PG
D COM
S/S GND
S901 CASSETTE LOCK SW
CN306(BLK)
CASSETTE LOCK IN
CASSETTE LOCK OUT
CN307
TO RS-18 BOARD W305
(See Page 173)
TAPE LED
M IN 2
REEL LED
M IN 1
S/S 5V
M IN 3
REEL COM
S/S GND
RECOG COM
L SW COM
M SW COM
M IN 0
HOLD
START
MOTOR POWER
CONT M CW
CONT M CCW
LOAD M CCW
LOAD M CW
MOTOR GND
CN308(WHT)
TO FC-10 BOARD W604
(See Page 135)
NC
SI BUS
SO BUS
SCK BUS
DDS CS
SYSTEM RESET
S/S 5V
S/S GND
NC
CAM POWER SW
Q331 2SB1114 DC OUT SWITCH
Q329 DTC144EK DC OUT SWITCH
Q324 DTA144EK
Q325 DTC144EK
AMP
IC307 μPC4250G2 DEW(S) DETECT
Q323 2SA812 WAKE UP
Q322 2SC1623 DEW(S) DETECT
IC302
IC302 CXP5048H-050Q MODE CONTROL CPU
IC306 S-8054ALB-LM RESET
IC305 S-81250AG 5V REG
Q318 DTA144EK
Q319 DTA144EK
INVERTER
IC304 (1/2)
D304 HZ4ALL
IC651 (1/2) μPC393G2 PLL
Q657 DTA144EK PLL
IC304 (1/2) μPC393G2 BATT PRE END/BATT END DETECT
Q656 2SA812 PLL
Q655 2SC1623 PLL
Q654 2SA812 PLL
D301 1S2835
D651 1SS196
IC303 MSM6411B-26GS-VK CONTROL L CPU
Q320 DTC144EK INVERTER
D305 1S2835
Q321 DTC144EK INVERTER
Q653 2SC1623
Q652 2SA812
Q651 2SC1623
PEAK DETECT
IC651 (1/2) μPC393G2 PEAK DETECT
IC301 CXP5048H-049Q MECHANICAL CONTROL CPU
IC501 CX20115A WAVE SHAPER
WAVE SHAPER
BIAS
IC508 TC4526BF COUNTER
Q504,505,509 2SA812
Q508,510 DTA144EK
Q506,507,514 2SC1623
Q511,512 DTC144EK
CUE/REV/CAPSTAN/DRUM SPEED CORRECTION
Q503 DTA114EK
Q502 2SA812 INVERTER
Q501 2SA812 C/R SW
Q515 DTA144TK DRUM COMP
Q513 DTC144EK INVERTER
Q526 DTC144TK
IC509 CXA1042M AFT SERVO
FL501 16KHz BPF
FL502 46KHz BPF
ATF BALANCE
NOTCH FILTER fo
Q301 DTC143TK SWITCH
Q302 DTC143TK SWITCH
Q303 DTC143TK SWITCH
Q326 DTC144EK DELAY
Q304 DTA144EK INVERTER
IC304 (1/2) μPC393G2 DEW(M) DETECT
Q314 DTA144EK INVERTER
Q313 DTC143TK INPUT MATRIX
Q312 DTA144EK INVERTER
Q311 DTC143TK INPUT MATRIX


IC301
CXP5048H-049Q
MECHANICAL CONTROL CPU
IC306
S-8054ALB-LM
RESET
IC302
CXP5048H-050Q
MODE CONTROL CPU
IC501
CX20115A
WAVE SHAPER
WAVE SHAPER
BIAS
IC508
TC4526BF
COUNTER
IC502
CX20035
DIGITAL SERVO
IC506 (1/4)
TC4066BF
SPEED GAIN SW
IC507
TC4052BF
ATF AC GAIN SW/
CAP BIAS SW
IC506 (1/4)
TC4066BF
AFT AC GAIN SW
IC504 (1/4)
NJM3403AM
CAPSTAN ERROR AMP
IC506 (1/4)
TC4066BF
SERVO AC GAIN SW
IC506 (1/4)
TC4066BF
SERVO DC GAIN SW
IC504 (1/4)
NJM3403AM
CAP BIAS BUFFER
Q525
DTA144EK
STARTER
Q504,505,509
2SA812
Q508,510
DTA144EK
Q506,507,514
2SC1623
Q511,512
DTC144EK
CUE/REV/CAPSTAN/DRUM SPEED CORRECTION
Q503
DTA114EK
Q502
2SA812
INVERTER
Q501
2SA812
C/R SW
Q515
DTA144TK
DRUM COMP
Q523
DTA144EK
DRUM STARTER
Q524
DTC144EK
DRUM STARTER
Q305
DTA144EK
INVERTER
Q306
DTA114EK
INVERTER
Q520
2SC1623
CAP Vs DISCHARGE
Q521
2SD999
CAP Vs DISCHARGE
Q522
2SD999
CAP Vs DISCHARGE
D505
1SS196
Q333
DTC144EK
AMP
Q332
DTA144EK
AMP
Q516
2SC1623
FREQUENCY LOCK
Q517
2SA812
FREQUENCY LOCK
Q518
2SC1623
FREQUENCY LOCK
Q519
2SA812
FREQUENCY LOCK
Q513
DTC144EK
INVERTER
IC509
CXA1042M
AFT SERVO
ATF BALANCE
FL501 16KHz BPF
FL502 46KHz BPF
Q526
DTC144TK
D501
1SS123
IC504 (1/4)
IC505
BA6303F
DRUM ERROR AMP
IC504 (1/4)
NJM3403AM
DRUM SPEED ERROR AMP
IC504 (1/4)
NJM3403AM
25Hz NOTCH FILTER
NOTCH FILTER fo
MOTOR POWER
Q334
2SA812
Q301
DTC143TK
SWITCH
Q302
DTC143TK
SWITCH
Q303
DTC143TK
SWITCH
Q326
DTC144EK
DELAY
Q304
DTA144EK
INVERTER
IC304 (1/2)
μPC393G2
DEW(MI) DETECT
Q314
DTA144EK
INVERTER
Q313
DTC143TK
INPUT MATRIX
Q312
DTA144EK
INVERTER
Q311
DTC143TK
INPUT MATRIX
Q310
DTC144EK
INPUT MATRIX
Q309
2SC1623
INPUT MATRIX
Q308
DTC144EK
INPUT MATRIX
Q307
2SC1623
INPUT MATRIX
Q315
2SC1623
MOTOR POWER REG
Q317
2SA1385
MOTOR POWER REG
D303
HZ4ALL
Q316
2SA812
MOTOR POWER REG
CN501
1 TAPE END
2 EJECT SW
3 5V UNREG
4 UNREG GND
5 TW
6 TW
7 DRUM ON
8 DRUM ERROR
9 DRUM BIAS
10 CAP Vcc
11 CAP CW/CCW
12 CAP ON
13 CAP BIAS
14 CAP ERROR
15 CAP VS
16 5V 5V
17 CAP FG(+)
18 S/S GND
19 CAP FG(−)
W502
FLAT CABLE
1 DRUM BIAS ADJ
2 REG 5.3V
3 TAPE TOP
4 SV 5V
5 D FG
6 D REF
7 C FG
8 SEL 1
9 SEL 2
10 ATF LOCK
11 S/S GND
12 ADE
13 CAP SP ADJ
14 CAP LP ADJ
15 SP SLOW ADJ
16 LP SLOW ADJ
17 BATT END ADJ
18 SWP ADJ
19 PAUSE ADJ
20 BATT DOWN
nomark : REC mode
( ) : PB mode
⟨ ⟩ : CUE mode
[ ] : REV mode


IC507 TC4052BF ATF AC GAIN SW/ CAP BIAS SW
IC506 (1/4) TC4066BF AFT AC GAIN SW
IC504 (1/4) NJM3403AM CAPSTAN ERROR AMP
IC504 (1/4) NJM3403AM CAP BIAS BUFFER
IC506 (1/4) TC4066BF SERVO AC GAIN SW
IC506 (1/4) TC4066BF SERVO DC GAIN SW
Q525 DTA144EK STARTER
D505 1SS196
Q333 DTC144EK AMP
Q332 DTA144EK AMP
Q516 2SC1623 FREQUENCY LOCK
Q517 2SA812 FREQUENCY LOCK
Q518 2SC1623 FREQUENCY LOCK
Q519 2SA812 FREQUENCY LOCK
IC505 BA6303F DRUM ERROR AMP
DC AMP
AMP
FG AMP
S&H CIR
COMB OSC
Q315 2SC1623 MOTOR POWER REG
Q317 2SA1385 MOTOR POWER REG
D303 HZ4ALL
Q316 2SA812 MOTOR POWER REG
Q334 2SA812
MOTOR POWER
L304 47μH
CN501
1 TAPE END
2 EJECT SW
3 SV UNREG
4 UNREG GND
5 TW
6 TW
7 DRUM ON
8 DRUM ERROR
9 DRUM BIAS
10 CAP Vcc
11 CAP CW/CCW
12 CAP ON
13 CAP BIAS
14 CAP ERROR
15 CAP VS
16 SV 5V
17 CAP FG(+)
18 S/S GND
19 CAP FG(−)
W503 FLAT CABLE
W502 FLAT CABLE
1 DRUM BIAS ADJ
2 REG 5.3V
3 TAPE TOP
4 SV 5V
5 D FG
6 D REF
7 C FG
8 SEL 1
9 SEL 2
10 ATF LOCK
11 S/S GND
12 ADE
13 CAP SP ADJ
14 CAP LP ADJ
15 SP SLOW ADJ
16 LP SLOW ADJ
17 BATT END ADJ
18 SWP ADJ
19 PAUSE ADJ
20 BATT DOWN
nomark : REC mode
( ) : PB mode
⟨ ⟩ : CUE mode
[ ] : REV mode
DR-36 BOARD
IC501 CX20114 DRUM MOTOR DRIVE
BRAKE
IB CONTROL
OVER LOAD DET
POWER OFF
CW/CCW
EMF MIX
STARTER
EMF DET
OSC
Q501 2SA812 STARTER
Q505 2SB1114 PWM POWER DRIVE
D502 E10QS03-TE12R
Q504 2SC1623 PROTECT
Q506 2SB1114 PWM POWER DRIVE
L501 200μH
L502 200μH
L503 200μH
TP520
MD GND
CN504 (RED)
1 DRUM (U) WHT
2 DRUM (V) YEL
3 DRUM (COM) GRY
4 DRUM (W) ORG
DRUM MOTOR
Q507 NJL7141E-S END SENSOR
IC502 CX20036 CAPSTAN MOTOR DRIVE
INPUT AMP
PWM CONTROL CIRCUIT
POWER OFF
HE POWER
HE AMP
120° LOGIC
MOTOR DRIVE
IB CONT
D501 E10QS03-TE12R
D503 E10QS03-TE12R
Q503 2SA812 EMERGENCY DETECT
Q502 DTC144EK CAP ON INHIBIT
TP501
W505 FLEXIBLE (FP-20)
1 CAP (U)
2 CAP (V)
3 CAP (W)
4 UNREG GND
5 VHE(+)
6 VHE(−)
7 UHE(+)
8 UHE(−)
9 WHE(+)
10 WHE(−)
11 VE
12 S/S 5V
13 CAP FG(+)
14 S/S GND
15 CAP FG(−)
M902 CAPSTAN MOTOR
CAPSTAN FG
CN312 (WHT)
1 EJECT SW
2 UNREG GND
no mark : REC mode
( ) : PB mode
TS-55 BOARD
RV501 47k ADE
Q501 NJL7141E-S TOP SENSOR
RV502 27k SP
RV503 22k LP
RV504 22k SLOW
RV506 47k END
RV507 220k SWP
RV508 470k PAUSE
CN506
CN507
1 ADE
2 S/S GND
3 ATF LOCK
4 SEL 2
5 SEL 1
6 C FG
7 D REF
8 D FG
CHECK PIN
TP502 BATT DOWN

Signal Path

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶»	
Drum servo (speed and phase)		▶»»	
Capstan speed servo		▶	
Capstan phase servo	▶»		▷»
Capstan servo (speed and phase)		▶»»	
Ref. signal	▶	▶	▷

SK-12 BOARD (Last two digits [24]) SERVO · MECHANISM CONTROL

- **Parts to be replaced.**

Ref. No.	Old	New
C302	1-163-021-00 CERAMIC CHIP 0.01MF 10% 50V	Deletes
R339	———	1-216-295-00 METAL CHIP 0 5% 1/10W

⬚ : Deletes (Printed wiring board)

////// : Deletes (Schematic diagram)

☛ : Replaced

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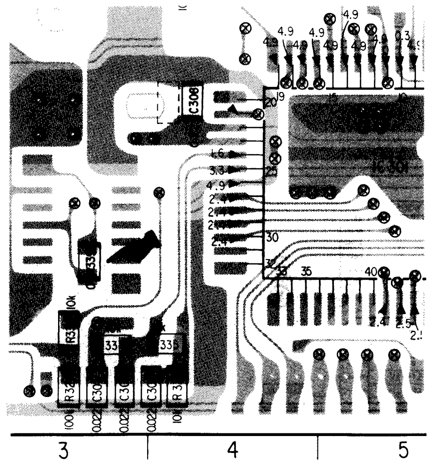
C306
R335
R334
R321
R320
C305
C304
C303
C302
C301
3
4
5

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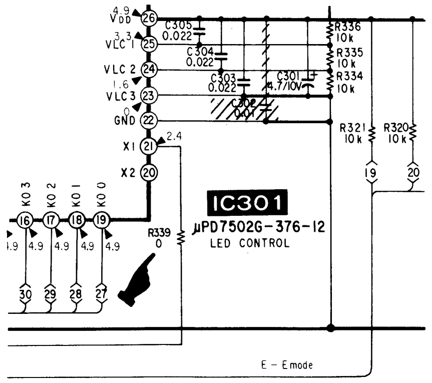

VDD 26
VLC1 25
VLC2 24
VLC3 23
GND 22
X1 21
X2 20
C305 0.022
C304 0.022
C303 0.022
C301 4.7/10V
R336 10k
R335 10k
R334 10k
R321 10k
R320 10k
IC301
μPD7502G-376-12
LED CONTROL
R339 0
KO3
KO2
KO1
KO0
E－Emode

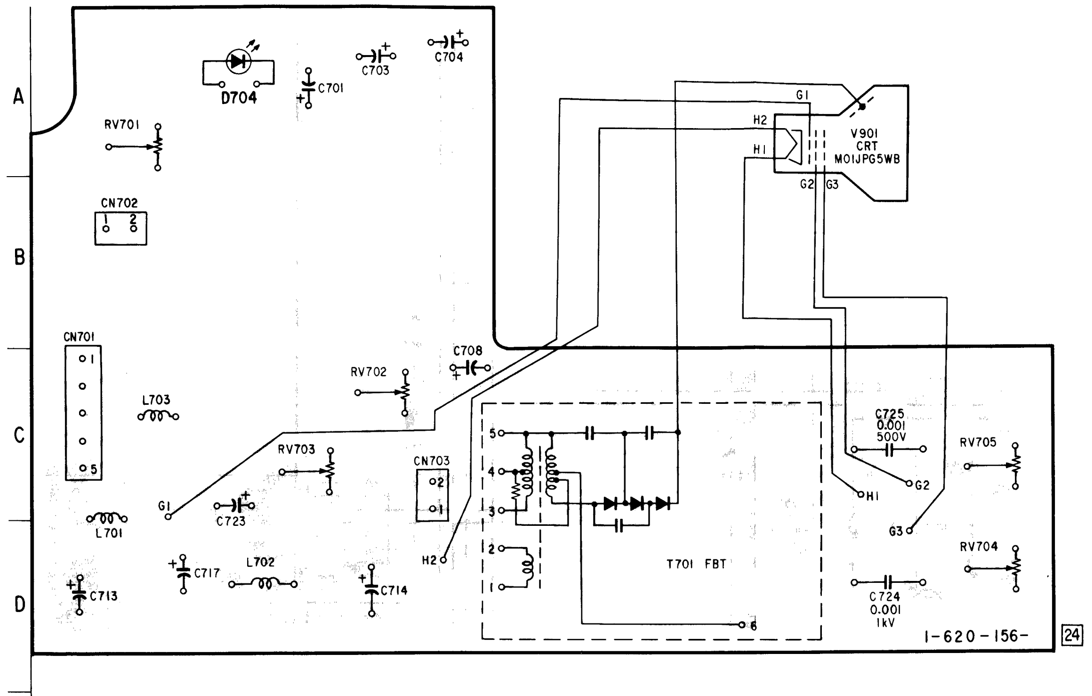
VF-7 BOARD (Last two digits [24]) ELECTRONIC VIEW FINDER

- **As to parts to be replaced, refer to the Electrical parts list.**

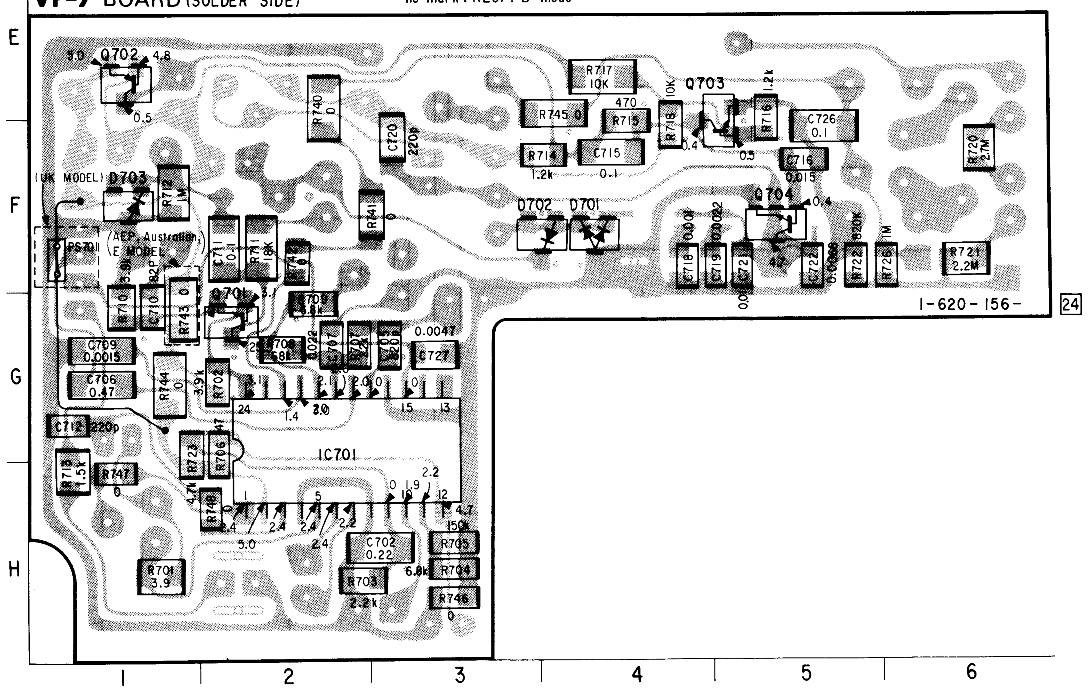
Page 184

D701	F-4
D702	F-4
D703	F-1
D704	A-2
IC701	G-2
Q701	G-2
Q702	E-1
Q703	F-5
Q704	F-5
RV701	A-1
RV702	C-3
RV703	C-2
RV704	D-6
RV705	C-6

VF-7 BOARD (COMPONENT SIDE) no mark: REC/PB mode


A
B
C
D
D704
C701
C703
C704
RV701
CN702
CN701
L703
RV702
C708
RV703
CN703
L701
C723
C713
C717
L702
C714
V901 CRT M01JPG5WB
G1
H2
H1
G2
G3
T701 FBT
C725 0.001 500V
RV705
RV704
C724 0.001 1kV
1-620-156-
24

VF-7 BOARD (SOLDER SIDE) no mark: REC/PB mode


E
F
G
H
Q702
Q703
Q704
Q701
D703
D702
D701
(UK MODEL)
(AEP, Australian, E MODEL)
PS701
IC701
R717 10K
R745 0
R715 470
R714 1.2k
C715 0.1
C726 0.1
C716 0.015
R720 2.7M
R721 2.2M
C720 220p
C709 0.0015
C706 0.47
C712 220p
C702 0.22
R703 2.2k
R701 3.9
R705 150k
R704 6.8k
R746 0
C727
1-620-156-
24
1
2
3
4
5
6

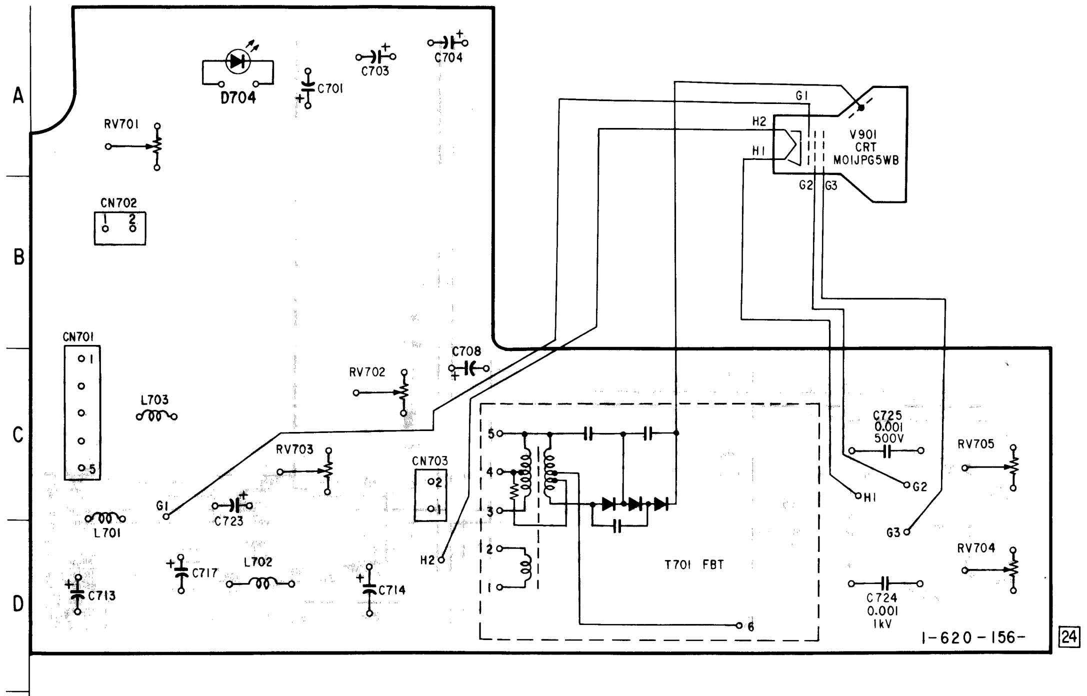
VF-7 BOARD (Last two digits 24) ELECTRONIC VIEW FINDER

- **As to parts to be replaced, refer to the Electrical parts list.**

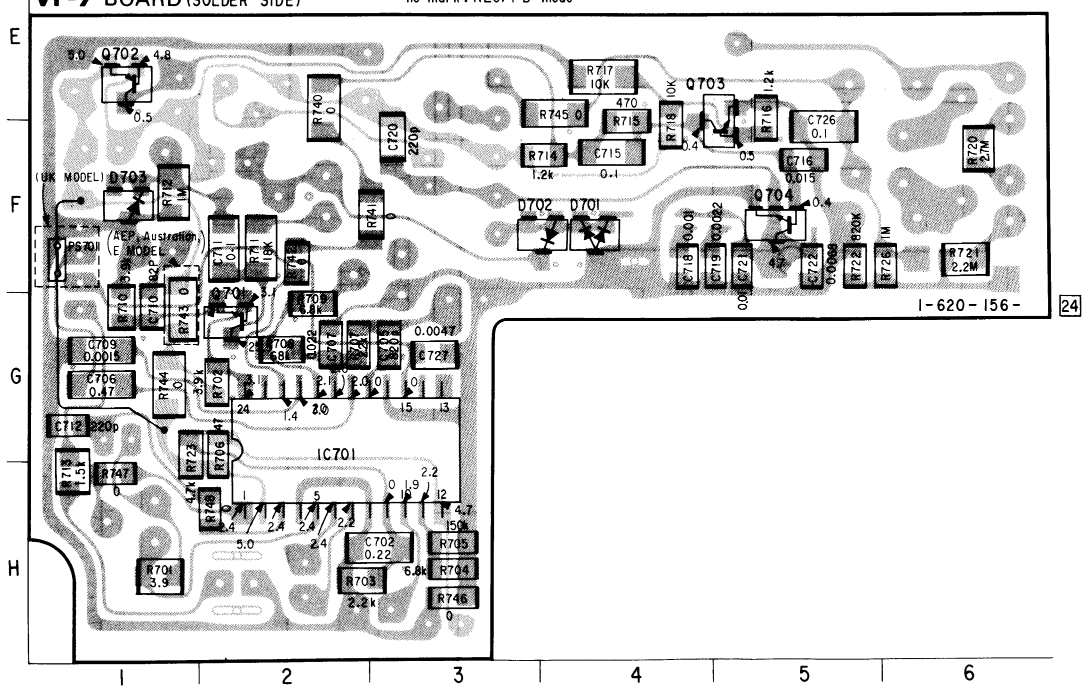
Page 184

D701	F - 4
D702	F - 4
D703	F - 1
D704	A - 2
IC701	G - 2
Q701	G - 2
Q702	E - 1
Q703	F - 5
Q704	F - 5
RV701	A - 1
RV702	C - 3
RV703	C - 2
RV704	D - 6
RV705	C - 6

VF-7 BOARD (COMPONENT SIDE) no mark: REC/PB mode


A
B
C
D
D704
C703
C704
C701
RV701
CN702
G1
H2
H1
V901 CRT M01JPG5WB
G2
G3
CN701
L703
RV702
C708
RV703
CN703
C725 0.001 500V
RV705
H1
G2
G3
L701
C723
C717
L702
C713
C714
H2
T701 FBT
RV704
C724 0.001 1kV
1-620-156-
24

VF-7 BOARD (SOLDER SIDE) no mark: REC/PB mode


E
F
G
H
Q702
Q703
Q704
D703
D702
D701
(UK MODEL)
(AEP, Australian, E MODEL)
PS701
R717 10K
R745 0
R715
R714 1.2k
C715 0.1
C726 0.1
C716 0.015
R720 2.7M
R721 2.2M
C709 0.0015
C706 0.47
C712 220p
R713 1.5k
R747 0
IC701
C702 0.22
R705
R704
R746
R701 3.9
R703 2.2k
1-620-156-
24
1
2
3
4
5
6

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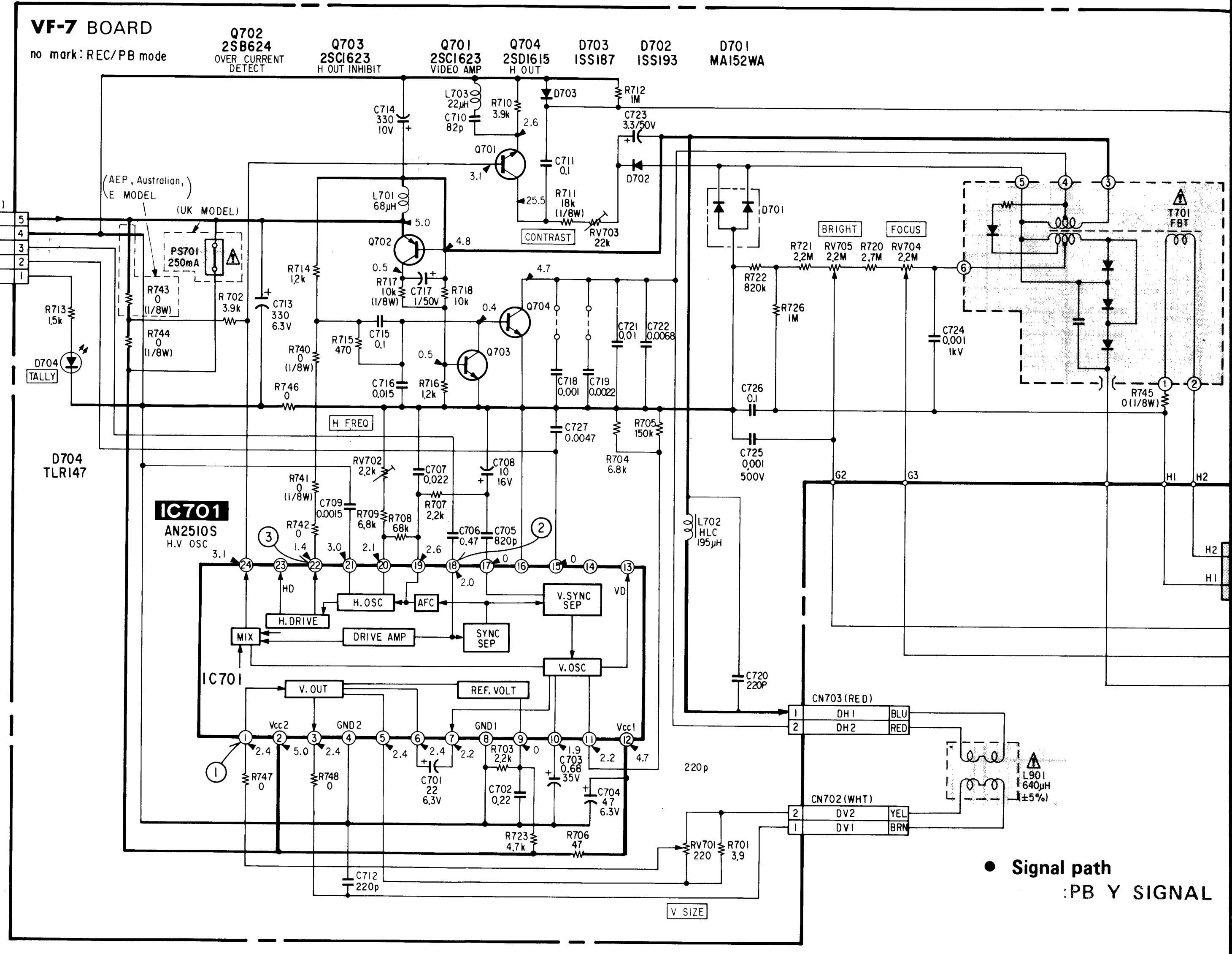
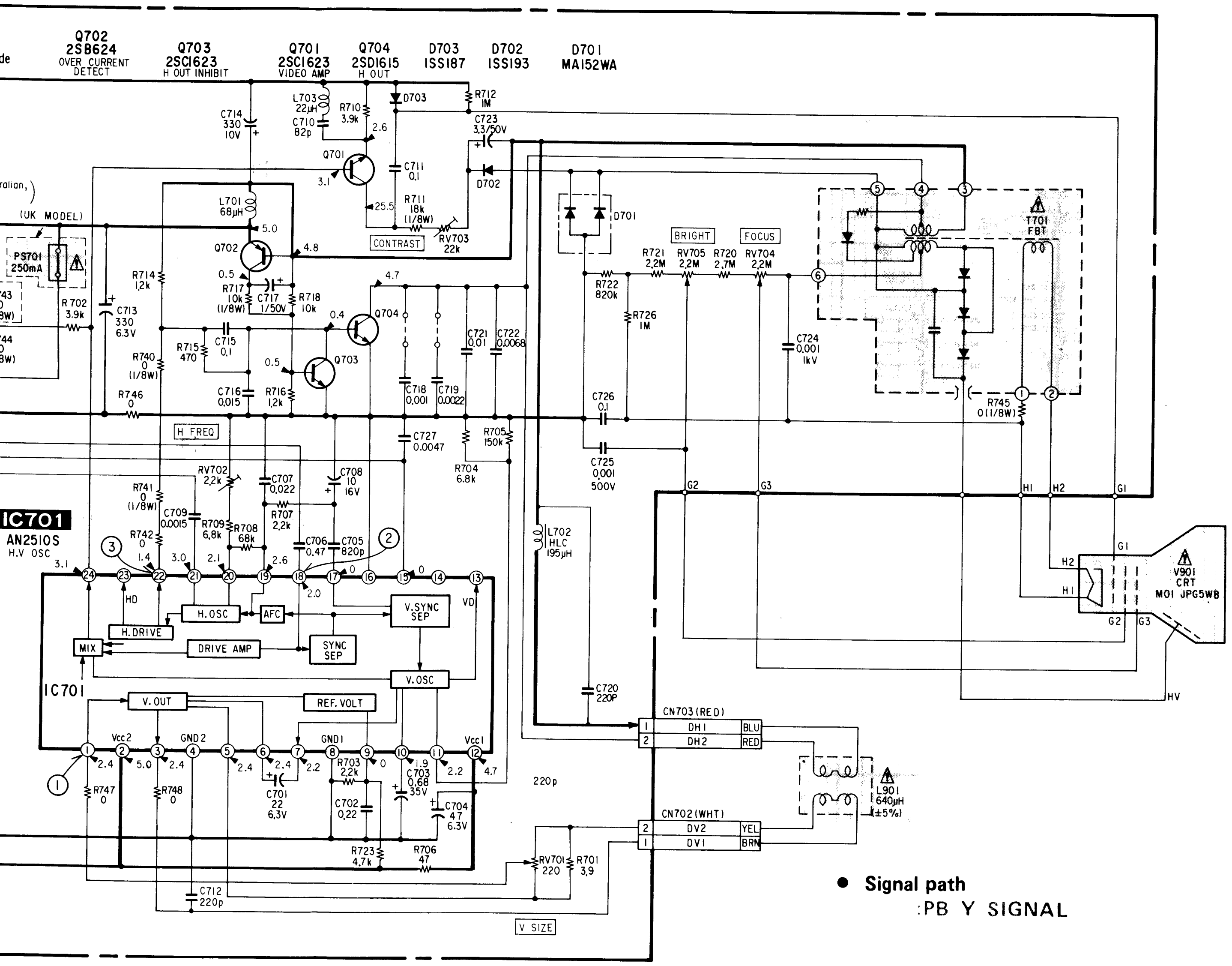

VF-7 BOARD
no mark: REC/PB mode
Q702 2SB624 OVER CURRENT DETECT
Q703 2SC1623 H OUT INHIBIT
Q701 2SC1623 VIDEO AMP
Q704 2SD1615 H OUT
D703 1SS187
D702 1SS193
D701 MA152WA
CN701(WHT)
EVF 5V
GND
VF OUT
IRIS IND
TALLY
(AEP, Australian, E MODEL)
(UK MODEL)
PS701 250mA
D704 TALLY
D704 TLR147
CONTRAST
RV703 22k
BRIGHT
FOCUS
T701 FBT
H FREQ
IC701 AN2510S H.V OSC
H.DRIVE
H.OSC
AFC
V.SYNC SEP
SYNC SEP
DRIVE AMP
MIX
V.OSC
V.OUT
REF. VOLT
Vcc2
GND2
GND1
Vcc1
CN703(RED)
DH1
DH2
BLU
RED
CN702(WHT)
DV2
DV1
YEL
BRN
L901 640μH (±5%)
L702 HLC 195μH
RV701 220
R701 3.9
V SIZE
G2
G3
H1
H2

- **Signal path**
:PB Y SIGNAL



- **Signal path**
  :PB Y SIGNAL

AI-1P

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

Ref.No	Part No.	Description			Remark
	*A-7060-626-A	AI-1P BOARD, COMPLETE **********************			
		CAPACITOR			
C781	1-124-224-00	ELECT	47MF	20%	6.3V
C782	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C783	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C784	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C785	1-124-222-00	ELECT	22MF	20%	6.3V
C786	1-124-222-00	ELECT	22MF	20%	6.3V
C787	1-124-222-00	ELECT	22MF	20%	6.3V
C789	1-124-236-00	ELECT	47MF	20%	10V
C790	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C791	1-124-236-00	ELECT	47MF	20%	10V
C792	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C793	1-124-255-00	ELECT	1MF	20%	50V
C794	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C795	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C797	1-131-383-00	TANTALUM	10MF	10%	6.3V
		CONNECTOR			
CN781	*1-564-007-00	PIN, CONNECTOR 8P			
CN782	*1-564-003-00	PIN, CONNECTOR 4P			
		DIODE			
D781	8-719-801-48	DIODE 1SS193			
D782	8-719-801-48	DIODE 1SS193			
D783	8-719-801-48	DIODE 1SS193			
D784	8-719-801-48	DIODE 1SS193			
D785	8-719-101-23	DIODE 1SS123			
D786	8-719-101-23	DIODE 1SS123			
D789	8-719-801-48	DIODE 1SS193			
		IC			
IC781	8-759-100-95	IC UPC324G2			
IC782	8-759-100-95	IC UPC324G2			
IC783	8-759-103-25	IC UPD4053BG			
IC784	8-759-103-03	IC UPD6107G			
		TRANSISTOR			
Q781	8-729-100-76	TRANSISTOR 2SA812			
Q782	8-729-100-66	TRANSISTOR 2SC1623			
Q783	8-729-100-76	TRANSISTOR 2SA812			
Q784	8-729-100-66	TRANSISTOR 2SC1623			
Q785	8-729-100-66	TRANSISTOR 2SC1623			
Q786	8-729-100-76	TRANSISTOR 2SA812			
Q787	8-729-100-76	TRANSISTOR 2SA812			
Q788	8-729-100-66	TRANSISTOR 2SC1623			
Q789	8-729-100-76	TRANSISTOR 2SA812			
Q790	8-729-901-01	TRANSISTOR DTC144EK			
Q791	8-729-100-66	TRANSISTOR 2SC1623			
Q792	8-729-100-76	TRANSISTOR 2SA812			
Q793	8-729-100-76	TRANSISTOR 2SA812			

Ref.No	Part No.	Description			Remark
		RESISTOR			
R781	1-216-107-00	METAL CHIP	270K	5%	1/10W
R782	1-216-049-00	METAL CHIP	1K	5%	1/10W
R783	1-216-073-00	METAL CHIP	10K	5%	1/10W
R784	1-216-073-00	METAL CHIP	10K	5%	1/10W
R785	1-216-073-00	METAL CHIP	10K	5%	1/10W
R786	1-216-089-00	METAL CHIP	47K	5%	1/10W
R787	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R788	1-216-073-00	METAL CHIP	10K	5%	1/10W
R789	1-216-121-00	METAL CHIP	1M	5%	1/10W
R790	1-216-085-00	METAL CHIP	33K	5%	1/10W
R791	1-216-089-00	METAL CHIP	47K	5%	1/10W
R792	1-216-089-00	METAL CHIP	47K	5%	1/10W
R793	1-216-117-00	METAL CHIP	680K	5%	1/10W
R794	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R795	1-216-089-00	METAL CHIP	47K	5%	1/10W
R796	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R797	1-216-105-00	METAL CHIP	220K	5%	1/10W
R798	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R799	1-216-073-00	METAL CHIP	10K	5%	1/10W
R800	1-216-075-00	METAL CHIP	12K	5%	1/10W
R801	1-216-073-00	METAL CHIP	10K	5%	1/10W
R802	1-216-081-00	METAL CHIP	22K	5%	1/10W
R803	1-216-081-00	METAL CHIP	22K	5%	1/10W
R804	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R805	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R806	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R809	1-216-073-00	METAL CHIP	10K	5%	1/10W
R810	1-216-089-00	METAL CHIP	47K	5%	1/10W
R811	1-216-077-00	METAL CHIP	15K	5%	1/10W
R812	1-216-073-00	METAL CHIP	10K	5%	1/10W
R813	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R814	1-216-091-00	METAL CHIP	56K	5%	1/10W
R815	1-216-105-00	METAL CHIP	220K	5%	1/10W
R816	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R817	1-216-083-00	METAL CHIP	27K	5%	1/10W
R818	1-216-091-00	METAL CHIP	56K	5%	1/10W
R819	1-216-073-00	METAL CHIP	10K	5%	1/10W
R820	1-216-041-00	METAL CHIP	470	5%	1/10W
R821	1-216-081-00	METAL CHIP	22K	5%	1/10W
R822	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R823	1-216-081-00	METAL CHIP	22K	5%	1/10W
R824	1-216-089-00	METAL CHIP	47K	5%	1/10W
R825	1-216-089-00	METAL CHIP	47K	5%	1/10W
R826	1-216-121-00	METAL CHIP	1M	5%	1/10W
R827	1-216-011-00	METAL CHIP	27	5%	1/10W
R828	1-216-049-00	METAL CHIP	1K	5%	1/10W
R829	1-216-089-00	METAL CHIP	47K	5%	1/10W
R830	1-216-097-00	METAL CHIP	100K	5%	1/10W
R831	1-216-081-00	METAL CHIP	22K	5%	1/10W
R832	1-216-081-00	METAL CHIP	22K	5%	1/10W
R833	1-216-021-00	METAL CHIP	68	5%	1/10W

Ref.No	Part No.	Description	Remark
R834	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R835	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R836	1-216-025-00	METAL CHIP 100 5% 1/10W	
R837	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R838	1-216-049-00	METAL CHIP 1K 5% 1/10W	
		VARIABLE RESISTOR	
RV781	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV782	1-230-871-21	RES, ADJ, METAL GLAZE 22K	

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	*A-7060-628-A	CG-1P BOARD, COMPLETE **********************	
	3-573-141-00	WASHER (B), THRUST	
	3-712-106-01	REINFORCEMENT (333)	
		CAPACITOR	
C671	1-124-222-00	ELECT 22MF 20% 6.3V	
C673	1-131-375-00	TANTALUM 4.7MF 10% 10V	
C674	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C675	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
C676	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C677	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C678	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C679	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
		CONNECTOR	
CN671	*1-564-008-61	PIN, CONNECTOR 9P	
CN672	*1-564-006-51	PIN, CONNECTOR 7P	
		TRIMMER	
CT671	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30PF	
		IC	
IC671	8-759-106-63	IC UPD74HC02G	
IC672	8-759-106-89	IC UPD74HC157G	
IC673	8-759-204-96	IC TC74HC04F	
IC675	8-759-107-89	IC UPD6105G-102	
IC676	8-759-107-89	IC UPD6105G-102	
IC677	8-759-106-96	IC UPD74HC174G	
IC678	8-759-106-96	IC UPD74HC174G	
		COIL	
L671	1-408-970-21	MICRO INDUCTOR 10UH	
L672	1-407-165-XX	MICRO INDUCTOR 47UH	
		TRANSISTOR	
Q671	8-729-901-06	TRANSISTOR DTA144EK	
Q672	8-729-100-66	TRANSISTOR 2SC1623	

Ref.No	Part No.	Description	Remark
		RESISTOR	
R671	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R672	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R673	1-216-295-00	METAL CHIP 0 5% 1/10W	
R674	1-216-031-00	METAL CHIP 180 5% 1/10W	
R675	1-216-054-00	METAL CHIP 1.6K 5% 1/10W	
R676	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R677	1-216-062-00	METAL CHIP 3.6K 5% 1/10W	
R678	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R679	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R680	1-216-062-00	METAL CHIP 3.6K 5% 1/10W	
R680	1-216-062-00	METAL CHIP 3.6K 5% 1/10W	
R681	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R682	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R683	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R684	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R685	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R686	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R687	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R688	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R689	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R690	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R697	⚠1-216-049-00	METAL CHIP 1K 5% 1/10W	F
R699	1-216-295-00	METAL CHIP 0 5% 1/10W	
		VARIABLE RESISTOR	
RV671	1-230-226-00	RES, VAR, CARBON 10K (IRIS)	
		SWITCH	
S671	1-553-977-00	SWITCH, SLIDE (FOCUS MANU/AUTO)	
S672	1-554-945-12	SWITCH, SLIDE (WHITE BLANCE)	
S673	1-553-977-00	SWITCH, SLIDE (SENS HIGH/LOW)	
S674	1-554-364-00	SWITCH, SLIDE (CAMERA POWER SW)	

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	*A-7060-631-A	VF-7P BOARD, COMPLETE (AEP, Australian, E MODEL)	
	*A-7060-748-A	VF-7P BOARD, COMPLETE (UK MODEL) **********************************	
	1-526-926-11	SOCKET ASSY, CRT	
	*3-662-075-00	COVER, CONTROL	
	*3-712-665-01	HOLDER, LED	
		CAPACITOR	
C701	1-123-618-00	ELECT 22MF 20% 6.3V	
C702	1-163-081-00	CERAMIC CHIP 0.22MF 25V	
C703	1-131-346-00	TANTALUM 0.68MF 10% 35V	
C704	1-124-224-00	ELECT 47MF 20% 6.3V	
C705	1-163-139-00	CERAMIC CHIP 820PF 10% 50V	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C706	1-162-637-11	CERAMIC CHIP 0.47MF		16V
C707	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V
C708	1-123-617-00	ELECT 10MF	20%	16V
C709	1-163-209-00	CERAMIC CHIP 0.0015MF	5%	50V
C710	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C711	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C712	1-163-125-00	CERAMIC CHIP 220PF	10%	50V
C713	1-124-442-00	ELECT 330MF	20%	6.3V
C714	1-124-604-00	ELECT 330MF	20%	10V
C715	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C716	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C717	1-123-611-00	ELECT 1MF	20%	50V
C718	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C719	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C720	1-163-189-00	CERAMIC CHIP 220PF	10%	50V
C721	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C722	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C723	1-123-613-00	ELECT 3.3MF	20%	50V
C724	1-162-146-00	CERAMIC 0.001MF		1KV
C725	1-102-038-00	CERAMIC 0.001MF	99%	500V
C726	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C727	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V

CONNECTOR

CN701	*1-564-004-00	PIN, CONNECTOR 5P
CN702	*1-564-001-11	PIN, CONNECTOR 2P
CN703	*1-564-001-11	PIN, CONNECTOR 2P

DIODE

D701	8-719-400-20	DIODE MA152WA
D702	8-719-801-48	DIODE 1SS193
D703	8-719-801-45	DIODE 1SS187
D704	8-719-800-24	DIODE TLR147 (TALLY)

IC

IC701	8-759-403-49	IC AN2510S

COIL

L701	1-407-167-XX	MICRO INDUCTOR 68UH
L702	1-459-683-11	COIL, FERRITE (HLC)
L703	1-407-161-XX	MICRO INDUCTOR 22UH

IC LINK

PS701⚠	1-532-833-21	LINK, IC 250mA (UK MODEL)

TRANSISTOR

Q701	8-729-100-66	TRANSISTOR 2SC1623
Q702	8-729-162-44	TRANSISTOR 2SB624-BV4
Q703	8-729-100-67	TRANSISTOR 2SC1623-L7
Q704	8-729-106-64	TRANSISTOR 2SD1615

RESISTOR

Ref.No	Part No.	Description			Remark
R701	1-216-306-11	METAL CHIP	3.9	5%	1/10W
R702	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R703	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R704	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R705	1-216-101-00	METAL CHIP	150K	5%	1/10W
R706	1-216-017-00	METAL CHIP	47	5%	1/10W
R707	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R708	1-216-093-00	METAL CHIP	68K	5%	1/10W
R709	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R710	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R711	1-216-228-00	METAL CHIP	18K	5%	1/8W
R712	1-216-121-00	METAL CHIP	1M	5%	1/10W
R713	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R714	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R715	1-216-041-00	METAL CHIP	470	5%	1/10W
R716	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R717	1-216-222-00	METAL CHIP	10K	5%	1/8W
R718	1-216-073-00	METAL CHIP	10K	5%	1/10W
R720	1-216-131-11	METAL CHIP	2.7M	5%	1/10W
R721	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R722	1-216-119-00	METAL CHIP	820K	5%	1/10W
R723	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R726	1-216-121-00	METAL CHIP	1M	5%	1/10W
R740	1-216-296-00	METAL CHIP	0	5%	1/8W
R741	1-216-296-00	METAL CHIP	0	5%	1/8W
R742	1-216-295-00	METAL CHIP	0	5%	1/10W
R743	1-216-296-00	METAL CHIP	0	5%	1/8W
			(AEP, Australian, E MODEL)		
R744	1-216-296-00	METAL CHIP	0	5%	1/8W
R745	1-216-296-00	METAL CHIP	0	5%	1/8W
R746	1-216-295-00	METAL CHIP	0	5%	1/10W
R747	1-216-295-00	METAL CHIP	0	5%	1/10W
R748	1-216-295-00	METAL CHIP	0	5%	1/10W

VARIABLE RESISTOR

RV701	1-226-925-00	RES, ADJ, SOLID 220
RV702	1-226-708-00	RES, ADJ, SOLID 2.2K
RV703	1-226-711-00	RES, ADJ, SOLID 22K
RV704	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M
RV705	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M

TRANSFORMER

T701 ⚠.	1-439-394-11	TRANSFORMER ASSY, PLYBACK

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*A-7060-616-A	SS-64P BOARD, COMPLETE (AEP, AUSTRALIAN, E MODEL)

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*A-7060-702-A	SS-64P BOARD, COMPLETE (UK MODEL)

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2-279-715-21	RIVET, NYLON
3-712-398-01	REINFORCEMENT (31)

CAPACITOR

C301	1-163-077-00	CERAMIC CHIP 0.1MF	50V

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
C302	1-163-103-00	CERAMIC CHIP 27PF		5%	50V
C303	1-163-103-00	CERAMIC CHIP 27PF		5%	50V
C304	1-124-234-00	ELECT	22MF	20%	16V
C305	1-124-257-00	ELECT	2.2MF	20%	35V
C306	1-124-233-00	ELECT	10MF	20%	10V
C307	1-163-077-00	CERAMIC CHIP 0.1MF			50V
C308	1-163-077-00	CERAMIC CHIP 0.1MF			50V
C309	1-135-099-00	TANTAL. CHIP 2.2MF		20%	6.3V
C311	1-163-077-00	CERAMIC CHIP 0.1MF			50V
C312	1-163-103-00	CERAMIC CHIP 27PF		5%	50V
C313	1-163-103-00	CERAMIC CHIP 27PF		5%	50V
C314	1-163-077-00	CERAMIC CHIP 0.1MF			50V
C315	1-163-105-00	CERAMIC CHIP 33PF		5%	50V
C316	1-163-105-00	CERAMIC CHIP 33PF		5%	50V
C318	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C322	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C323	1-163-021-00	CERAMIC CHIP 0.01MF		10%	50V
C325	1-163-021-00	CERAMIC CHIP 0.01MF		10%	50V
C327	1-163-021-00	CERAMIC CHIP 0.01MF		10%	50V
C329	1-163-021-00	CERAMIC CHIP 0.01MF		10%	50V
C330	1-163-035-00	CERAMIC CHIP 0.047MF		10%	25V
C331	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C332	1-163-017-00	CERAMIC CHIP 0.0047MF		10%	50V
C334	1-135-099-00	TANTAL. CHIP 2.2MF		20%	6.3V
C335	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C336	1-163-038-00	CERAMIC CHIP 0.1MF			25V
C337	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C501	1-124-222-00	ELECT	22MF	20%	6.3V
C502	1-124-257-00	ELECT	2.2MF	20%	35V
C503	1-163-021-00	CERAMIC CHIP 0.01MF			50V
C504	1-163-021-00	CERAMIC CHIP 0.01MF			50V
C505	1-124-233-00	ELECT	10MF	20%	6.3V
C506	1-163-020-00	CERAMIC CHIP 0.0082MF		10%	50V
C507	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C508	1-163-035-00	CERAMIC CHIP 0.047MF		10%	25V
C509	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C510	1-163-017-00	CERAMIC CHIP 0.0047MF		10%	50V
C511	1-124-499-11	ELECT	1MF	20%	50V
C513	1-124-233-00	ELECT	10MF	20%	6.3V
C514	1-126-099-11	ELECT	2.2MF	20%	35V
C516	1-126-100-11	ELECT	10MF	20%	6.3V
C518	1-163-017-00	CERAMIC CHIP 0.0047MF		10%	50V
C519	1-163-017-00	CERAMIC CHIP 0.0047MF		10%	50V
C520	1-130-487-00	MYLAR	0.022MF	5%	50V
C524	1-163-035-00	CERAMIC CHIP 0.047MF		10%	25V
C525	1-126-099-11	ELECT	2.2MF	20%	35V
C527	1-124-499-11	ELECT	1MF	20%	50V
C529	1-126-099-11	ELECT	2.2MF	20%	35V
C531	1-163-023-00	CERAMIC CHIP 0.015MF		10%	50V
C532	1-163-021-00	CERAMIC CHIP 0.01MF		10%	50V

Ref.No	Part No.	Description			Remark
C533	1-124-233-00	ELECT	10MF	20%	10V
C536	1-163-133-00	CERAMIC CHIP 470PF		5%	50V
C537	1-163-021-00	CERAMIC CHIP 0.01MF		10%	50V
C540	1-163-021-00	CERAMIC CHIP 0.01MF			50V
C541	1-126-099-11	ELECT	2.2MF	20%	35V
C543	1-163-021-00	CERAMIC CHIP 0.01MF		10%	50V
C544	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C545	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C546	1-163-035-00	CERAMIC CHIP 0.047MF		10%	25V
C547	1-163-139-00	CERAMIC CHIP 820PF		5%	50V
C548	1-163-141-00	CERAMIC CHIP 0.001MF		10%	50V
C549	1-163-021-00	CERAMIC CHIP 0.01MF		10%	50V
C550	1-163-035-00	CERAMIC CHIP 0.047MF		10%	25V
C553	1-124-222-00	ELECT	22MF	20%	6.3V
C554	1-163-021-00	CERAMIC CHIP 0.01MF		10%	50V
C555	1-127-487-00	ELECT	4.7MF	20%	10V
C556	1-163-035-00	CERAMIC CHIP 0.047MF		10%	25V
C557	1-163-141-00	CERAMIC CHIP 0.001MF		10%	50V
C558	1-124-258-00	ELECT	3.3MF	20%	25V
C559	1-163-129-00	CERAMIC CHIP 330PF		5%	50V
C560	1-163-117-00	CERAMIC CHIP 100PF		5%	50V
C562	1-163-117-00	CERAMIC CHIP 100PF		5%	50V
C563	1-163-113-00	CERAMIC CHIP 68PF		5%	50V
C564	1-163-121-00	CERAMIC CHIP 150PF		5%	50V
C651	1-163-013-00	CERAMIC CHIP 0.0022MF		10%	50V
C652	1-163-023-00	CERAMIC CHIP 0.015MF		10%	50V
C653	1-135-091-00	TANTAL. CHIP 1MF		20%	16V
C654	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C655	1-163-035-00	CERAMIC CHIP 0.047MF		10%	25V
C656	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C657	1-163-077-00	CERAMIC CHIP 0.1MF			50V
C658	1-124-233-00	ELECT	10MF	20%	6.3V
C659	1-135-091-00	TANTAL. CHIP 1MF		20%	16V
C660	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V
C661	1-163-141-00	CERAMIC CHIP 0.001MF		10%	50V
C662	1-163-133-00	CERAMIC CHIP 470PF		5%	50V
C663	1-135-091-00	TANTAL. CHIP 1MF		20%	16V
C664	1-163-141-00	CERAMIC CHIP 0.001MF		10%	50V
C665	1-163-077-00	CERAMIC CHIP 0.1MF			50V
C666	1-163-034-00	CERAMIC CHIP 0.033MF		10%	25V
C667	1-163-035-00	CERAMIC CHIP 0.047MF		10%	25V
C669	1-163-133-00	CERAMIC CHIP 470PF		5%	50V
C670	1-163-035-00	CERAMIC CHIP 0.047MF		10%	25V
C672	1-163-033-00	CERAMIC CHIP 0.022MF		10%	25V

CONNECTOR

CN301	*1-564-029-00	PIN, CONNECTOR 4P
CN302	*1-564-013-00	PIN, CONNECTOR 3P
CN303	*1-564-013-00	PIN, CONNECTOR 3P
CN304	*1-564-012-00	PIN, CONNECTOR 2P
CN305	*1-564-014-00	PIN, CONNECTOR 4P
CN306	*1-564-012-00	PIN, CONNECTOR 2P
CN307	*1-562-887-11	CONNECTOR, F.P.C 20P

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
CN308	*1-564-020-00	PIN, CONNECTOR 10P	
CN309	1-563-492-11	CONNECTOR, F.P.C 19P	
CN310	*1-564-014-00	PIN, CONNECTOR 4P	
CN311	*1-564-003-00	PIN, CONNECTOR 4P	
CN313	*1-564-016-00	PIN, CONNECTOR 6P	
CN314	*1-564-012-00	PIN, CONNECTOR 2P	
CN501	1-563-492-11	CONNECTOR, F.P.C 19P	
		DIODE	
D301	8-719-100-03	DIODE 1S2835	
D303	8-719-914-11	DIODE HZ4ALL	
D304	8-719-914-11	DIODE HZ4ALL	
D305	8-719-100-03	DIODE 1S2835	
D501	8-719-101-23	DIODE 1SS123	
D505	8-719-801-41	DIODE 1SS196	
D651	8-719-801-41	DIODE 1SS196	
		FILTER	
FL501	1-235-612-21	BPF (16KHZ)	
FL502	1-235-611-21	BPF (46KHZ)	
		IC	
IC301	8-752-801-50	IC CXP5048H-049Q	
IC302	8-752-801-51	IC CXP5048H-050Q	
IC303	8-759-925-43	IC MSM6411B-26GS-VK	
IC304	8-759-100-93	IC UPC393G2	
IC305	8-759-922-54	IC S-81250AG	
IC306	8-759-913-41	IC S-8054ALB	
IC307	8-759-100-92	IC UPC4250G2	
IC501	8-759-107-68	IC CX20115A	
IC502	8-752-003-50	IC CX20035	
IC504	8-759-701-36	IC NJM3403AM	
IC505	8-759-925-66	IC BA6303F	
IC506	8-759-201-01	IC TC4066BF	
IC507	8-759-201-00	IC TC4052BF	
IC508	8-759-201-80	IC TC4526BF	
IC509	8-759-928-56	IC CXA1042M	
IC651	8-759-100-93	IC UPC393G2	
		COIL	
L301	1-408-987-21	MICRO INDUCTOR 330UH	
L302	1-408-795-21	INDUCTOR CHIP 330UH	
L303	1-408-795-21	INDUCTOR CHIP 330UH	
L304	1-410-389-11	INDUCTOR CHIP 47UH	
L501	1-407-165-XX	MICRO INDUCTOR 47UH	
L502	1-408-795-21	INDUCTOR CHIP 330UH	
L503	1-408-793-21	INDUCTOR CHIP 220UH	
		IC LINK	
PS301⚠	1-532-605-11	LINK, IC	

Ref.No	Part No.	Description	Remark
		TRANSISTOR	
Q301	8-729-900-98	TRANSISTOR DTC143TK	
Q302	8-729-900-98	TRANSISTOR DTC143TK	
Q303	8-729-900-98	TRANSISTOR DTC143TK	
Q304	8-729-901-06	TRANSISTOR DTA144EK	
Q305	8-729-901-06	TRANSISTOR DTA144EK	
Q306	8-729-901-04	TRANSISTOR DTA114EK	
Q307	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q308	8-729-901-01	TRANSISTOR DTC144EK	
Q309	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q310	8-729-901-01	TRANSISTOR DTC144EK	
Q311	8-729-900-98	TRANSISTOR DTC143TK	
Q312	8-729-901-06	TRANSISTOR DTA144EK	
Q313	8-729-900-98	TRANSISTOR DTC143TK	
Q314	8-729-901-06	TRANSISTOR DTA144EK	
Q315	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q316	8-729-100-76	TRANSISTOR 2SA812	
Q317	8-729-105-29	TRANSISTOR 2SA1385	
Q318	8-729-901-06	TRANSISTOR DTA144EK	
Q319	8-729-901-06	TRANSISTOR DTA144EK	
Q320	8-729-901-01	TRANSISTOR DTC144EK	
Q321	8-729-901-01	TRANSISTOR DTC144EK	
Q322	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q323	8-729-100-76	TRANSISTOR 2SA812	
Q324	8-729-901-06	TRANSISTOR DTA144EK	
Q325	8-729-901-01	TRANSISTOR DTC144EK	
Q326	8-729-901-01	TRANSISTOR DTC144EK	
Q329	8-729-901-01	TRANSISTOR DTC144EK	
Q331	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q332	8-729-901-06	TRANSISTOR DTA144EK	
Q333	8-729-901-01	TRANSISTOR DTC144EK	
Q334	8-729-100-76	TRANSISTOR 2SA812	
Q501	8-729-100-76	TRANSISTOR 2SA812	
Q502	8-729-102-72	TRANSISTOR 2SA812	
Q503	8-729-901-09	TRANSISTOR DTA114EK	
Q504	8-729-100-76	TRANSISTOR 2SA812	
Q505	8-729-100-76	TRANSISTOR 2SA812	
Q506	8-729-100-66	TRANSISTOR 2SC1623	
Q507	8-729-100-66	TRANSISTOR 2SC1623	
Q508	8-729-901-06	TRANSISTOR DTA144EK	
Q509	8-729-100-76	TRANSISTOR 2SA812	
Q510	8-729-901-06	TRANSISTOR DTA144EK	
Q511	8-729-901-01	TRANSISTOR DTC144EK	
Q512	8-729-901-01	TRANSISTOR DTC144EK	
Q513	8-729-901-01	TRANSISTOR DTC144EK	
Q514	8-729-100-66	TRANSISTOR 2SC1623	
Q515	8-729-903-29	TRANSISTOR DTA144TK	
Q516	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q517	8-729-100-76	TRANSISTOR 2SA812	
Q518	8-729-100-67	TRANSISTOR 2SC1623-L7	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
Q519	8-729-100-76	TRANSISTOR 2SA812				
Q520	8-729-100-67	TRANSISTOR 2SC1623-L7				
Q521	8-729-199-92	TRANSISTOR 2SD999				
Q522	8-729-199-92	TRANSISTOR 2SD999				
Q523	8-729-901-06	TRANSISTOR DTA144EK				
Q524	8-729-901-01	TRANSISTOR DTC144EK				
Q525	8-729-901-06	TRANSISTOR DTA144EK				
Q526	8-729-403-49	TRANSISTOR DTC144TK				
Q651	8-729-100-67	TRANSISTOR 2SC1623-L7				
Q652	8-729-100-76	TRANSISTOR 2SA812				
Q653	8-729-100-67	TRANSISTOR 2SC1623-L7				
Q654	8-729-100-76	TRANSISTOR 2SA812				
Q655	8-729-100-67	TRANSISTOR 2SC1623-L7				
Q656	8-729-100-76	TRANSISTOR 2SA812				
Q657	8-729-901-06	TRANSISTOR DTA144EK				
		RESISTOR				
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R303	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R304	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R305	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R306	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R307	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R308	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R310	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R311	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R312	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R313	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R314	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R315	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R317	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R318	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R319	1-216-041-00	METAL CHIP	470	5%	1/10W	
R320	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R321	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R322	1-216-045-00	METAL CHIP	680	5%	1/10W	
R323	1-216-194-00	METAL CHIP	680	5%	1/8W	
R324	1-216-194-00	METAL CHIP	680	5%	1/8W	
R325	1-216-194-00	METAL CHIP	680	5%	1/8W	
R326	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R327	1-216-123-11	METAL CHIP	1.2M	5%	1/10W	
R328	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R329	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R330	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R331	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R332	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R333	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R334	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R335	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R336	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R337	1-216-047-00	METAL CHIP	820	5%	1/10W	
R338	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R339	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R340	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R341	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R342	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R343	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R344	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R345	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R346	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R347	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R348	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R349	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R350	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R351	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R353	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R354	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R355	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R356	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R357	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R359	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R360	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R361	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R362	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R363	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R364	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R365	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R366	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R367	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R368	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R369	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R370	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R371	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R373	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R375	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R376	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R377	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R378	1-216-174-00	METAL CHIP	100	5%	1/8W	
R379	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R381	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R383	1-216-295-00	METAL CHIP	0	5%	1/10W	
R385	1-216-295-00	METAL CHIP	0	5%	1/10W	
R387	1-216-295-00	METAL CHIP	0	5%	1/10W	
R389	1-216-295-00	METAL CHIP	0	5%	1/10W	
R390	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R392	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R393	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R394	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R395	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R396	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R397	1-216-073-00	METAL CHIP	10K	5%	1/10W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R399	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R501	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R502	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R503	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R504	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R505	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R506	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R507	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R508	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R509	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R510	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R511	1-216-107-00	METAL CHIP	270K	5%	1/10W	
R512	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R513	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R514	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R515	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R516	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R517	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R518	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R519	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R520	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R521	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R522	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R523	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R524	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R525	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R526	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R527	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R528	1-216-182-00	METAL CHIP	220	5%	1/8W	
R529	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R530	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R531	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R532	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R534	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R535	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R536	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R537	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R538	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R539	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R540	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R541	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R542	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R543	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R544	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R545	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R546	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R547	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R548	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R549	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R550	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R552	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R553	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R554	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R555	1-216-655-11	METAL CHIP	1.5K	0.5%	1/16W	
R556	1-216-660-11	METAL CHIP	2.4K	0.5%	1/16W	

Ref.No	Part No.	Description				Remark
R557	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R558	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R559	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R560	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R561	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R563	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R564	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R565	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R566	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R567	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R568	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R569	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R570	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R571	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R572	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R573	1-216-087-00	METAL CHIP	39K	5%	1/10W	
R574	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R575	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R576	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R577	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R578	1-216-047-00	METAL CHIP	820	5%	1/10W	
R579	1-216-117-00	METAL CHIP	680K	5%	1/10W	
R580	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R581	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R582	1-216-673-11	METAL CHIP	8.2K	0.5%	1/16W	
R583	1-216-115-00	METAL CHIP	560K	5%	1/10W	
R584	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R585	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R586	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R587	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R588	1-216-295-00	METAL CHIP	0	5%	1/10W	
R589	1-216-295-00	METAL CHIP	0	5%	1/10W	
R590	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R591	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R593	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R594	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R595	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R596	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R597	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R598	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R651	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R652	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R653	1-216-047-00	METAL CHIP	820	5%	1/10W	
R654	1-216-015-00	METAL CHIP	39	5%	1/10W	
R655	1-216-029-00	METAL CHIP	150	5%	1/10W	
R656	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R657	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R658	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R659	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R660	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R661	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R662	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R663	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R664	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R665	1-216-073-00	METAL CHIP	10K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R666	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R668	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R669	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R670	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R671	1-216-045-00	METAL CHIP 680 5% 1/10W	
R672	1-216-027-00	METAL CHIP 120 5% 1/10W	
R673	1-216-047-00	METAL CHIP 820 5% 1/10W	
R674	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R675	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R676	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R677	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R678	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R679	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R680	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R681	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R682	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R683	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R684	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R685	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R686	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R687	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R688	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R689	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R691	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R696	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R697	1-216-073-00	METAL CHIP 10K 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV301	1-230-867-11	RES, ADJ, METAL GLAZE 1K	
RV501	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV502	1-230-873-11	RES, ADJ, METAL GLAZE 47K	

CRYSTAL

Ref.No	Part No.	Description	Remark
X301	1-567-346-11	OSCILLATOR, CERAMIC (5MHZ)	
X302	1-567-346-11	OSCILLATOR, CERAMIC (5MHZ)	
X303	1-567-192-11	OSCILLATOR, CERAMIC (4MHZ)	

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*A-7060-494-A DR-36P BOARD, COMPLETE

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CAPACITOR

Ref.No	Part No.	Description	Remark
C501	1-124-255-00	ELECT 1MF 20% 50V	
C502	1-124-255-00	ELECT 1MF 20% 50V	
C503	1-124-255-00	ELECT 1MF 20% 50V	
C504	1-124-258-00	ELECT 3.3MF 20% 25V	
C505	1-124-255-00	ELECT 1MF 20% 50V	
C506	1-163-075-00	CERAMIC CHIP 0.047MF 10% 25V	
C507	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C508	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C509	1-126-099-11	ELECT 2.2MF 20% 35V	
C511	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C512	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C513	1-124-577-11	ELECT 82MF 20% 10V	
C514	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C515	1-124-577-11	ELECT 82MF 20% 10V	
C516	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C517	1-124-233-00	ELECT 10MF 20% 16V	
C518	1-124-233-00	ELECT 10MF 20% 16V	
C519	1-124-233-00	ELECT 10MF 20% 16V	
C520	1-124-577-11	ELECT 82MF 20% 10V	
C521	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C522	1-124-596-11	ELECT 27MF 20% 16V	
C523	1-124-596-11	ELECT 27MF 20% 16V	
C524	1-124-596-11	ELECT 27MF 20% 16V	
C527	1-163-035-00	CERAMIC CHIP 0.047MF 10% 25V	
C528	1-163-035-00	CERAMIC CHIP 0.047MF 10% 25V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN312	*1-564-012-00	PIN, CONNECTOR 2P	
CN504	*1-564-014-00	PIN, CONNECTOR 4P	

DIODE

Ref.No	Part No.	Description	Remark
D501	8-719-200-35	DIODE E10QS03	
D502	8-719-200-35	DIODE E10QS03	
D503	8-719-200-35	DIODE E10QS03	

IC

Ref.No	Part No.	Description	Remark
IC501	8-759-202-45	IC CX20114	
IC502	8-752-003-60	IC CX20036	

COIL

Ref.No	Part No.	Description	Remark
L501	1-410-628-11	COIL, CHOKE 200UH	
L502	1-410-628-11	COIL, CHOKE 200UH	
L503	1-410-628-11	COIL, CHOKE 200UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q501	8-729-100-76	TRANSISTOR 2SA812	
Q502	8-729-901-01	TRANSISTOR DTC144EK	
Q503	8-729-100-76	TRANSISTOR 2SA812	
Q504	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q505	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q506	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q507	8-729-700-10	NJL7141E-S	

RESISTOR

Ref.No	Part No.	Description	Remark
R501	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R502	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R503	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R504	1-216-087-00	METAL CHIP 39K 5% 1/10W	
R505	1-216-047-00	METAL CHIP 820 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R506	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R507	1-216-025-00	METAL CHIP	100	5%	1/10W	
R508	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R509	1-216-041-00	METAL CHIP	470	5%	1/10W	
R510	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R511	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R512	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R513	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R514	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R515	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R516	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R517	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R519	1-216-025-00	METAL CHIP	100	5%	1/10W	
R520	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R521	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R522	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R523	1-214-972-00	METAL	0.22	5%	1/4W	
R524	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R525	1-216-041-00	METAL CHIP	470	5%	1/10W	
R526	1-216-041-00	METAL CHIP	470	5%	1/10W	
R527	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R528	1-216-304-11	METAL CHIP	3.3	5%	1/10W	
R530	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R534	1-216-295-00	METAL CHIP	0	5%	1/10W	

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*A-7060-617-A TS-55P BOARD, COMPLETE
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CONNECTOR

CN506	*1-562-887-11	CONNECTOR, F.P.C 20P
CN507	*1-564-018-11	PIN, CONNECTOR 8P

TRANSISTOR

0501	8-729-700-10	NJL7141E-S

RESISTOR

R501	1-216-081-00	METAL CHIP	22K	5%	1/10W
R502	1-216-079-00	METAL CHIP	18K	5%	1/10W
R505	1-216-081-00	METAL CHIP	22K	5%	1/10W
R506	1-216-079-00	METAL CHIP	18K	5%	1/10W
R507	1-216-081-00	METAL CHIP	22K	5%	1/10W
R508	1-216-079-00	METAL CHIP	18K	5%	1/10W
R510	1-216-295-00	METAL CHIP	0	5%	1/10W
R512	1-216-295-00	METAL CHIP	0	5%	1/10W

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV501	1-230-526-11	RES, ADJ, METAL GLAZE 47K	
RV502	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV503	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV504	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV506	1-230-526-11	RES, ADJ, METAL GLAZE 47K	
RV507	1-230-528-11	RES, ADJ, METAL GLAZE 220K	
RV508	1-230-529-11	RES, ADJ, METAL GLAZE 470K	

When indicating parts by reference number, please include the board name.

CCD-V100E

SONY

SERVICE MANUAL

AEP Model
UK Model
Australian Model
E Model

SUPPLEMENT-4

Subject: Partial change of parts of UK Model

- **File this supplement with the service manual.**
- **In the UK Model, parts to sets after Serial No. 400001 have been changed as follows:**

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No.	Part No.	Description	Remark
14	*3-713-960-01	LABEL, MODEL NUMBER (UK MODEL is beyond the object of the FTZ)	

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Ref.No	Part No.	Description	Remark
		ACCESSORIES AND PACKING MATERIALS *********************************	
	1-570-730-11	SWITCH, ANTENNA (ANS-37)	
	3-712-673-01	SCREW DRIVER	

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.